2020 SITE MANAGEMENT REPORT

COLD SPRING MGP SITE
VILLAGE OF COLD SPRING, NEW YORK 10516

NYSDEC Site No. 340026
Work Assignment No. D009812-04.05

Prepared for:

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Division of Environmental Remediation
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AUGUST 2021

TRC Project No. 386554

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ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
ASP-B	Analytical Services Protocol – Category B Deliverables
BTEX	Benzene, Toluene, Ethylbenzene, and total Xylenes
COC	Contaminant of Concern
DER	Department of Environmental Remediation
DTW	Depth to Water
DUSRs	Data Usability Summary Reports
EC	Engineering Control
EDD	Electronic Data Deliverable
EE	Environmental Easement
Eurofins/TestAmerica	Eurofins/TestAmerica Laboratories of Amherst, New York
Ft. bgs	Feet Below Ground Surface
IC	Institutional Control
IHWDS	Inactive Hazardous Waste Disposal Site
µg/L	Micrograms per Liter
MGP	Manufactured Gas Plant
ng/L	Nanograms per Liter
NYSDEC	New York State Department of Environmental Conservation
PAHS	Polycyclic Aromatic Hydrocarbons
PFAS	Per- and Polyfluoroalkyl Substances
PRR	Periodic Review Report
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action
ROD	Record of Decision
SCG	Standards, Criteria, and Guidance
SMP	Site Management Plan
SMR	Site Management Report
TRC	TRC Engineers, Inc.
USEPA	United States Environmental Protection Agency
WA	Work Assignment

Executive Summary

Category	Summary/Results
Site Classification	The Site is currently classified as a Class 4 IHWDS.
Site Management Plan	The SMP is dated February 2019.
Required Site Management Activities	One site inspection and one groundwater sampling event is required annually or at a frequency determined by the NYSDEC.
Engineering Control	Cover system and site monitoring wells.
Institutional Control	An Environmental Easement is in place on the Site which includes: Groundwater Use Restriction, Soil Management Plan, Cover System, Land-use Restriction, Building Use Restriction Monitoring Plan, Site Management Plan, and an IC/EC Plan.
Certification/Reporting Period	Per the February 2019 SMP, a PRR and IC/EC Certification for the period dated March 2013 to July 2018 was submitted by URS Corporation to the NYSDEC on August 30, 2018 and was approved on December 18, 2018. The frequency of Site PRRs is every three years with the next periodic review and certification due in August 2021. Annual SMRs are required by the SMP.
Prior PRR/SMR Recommendations	The December 2018 PRR was not available for review during this reporting period. However, the February 2019 SMP recommended that downgradient monitoring well GW-03 be reinstalled if it could not be located during future groundwater sampling events.
Site Management Activities	A field inspection was completed on September 8, 2020 to determine the status of the Site and associated monitoring wells. One round of groundwater level measurements and sampling was completed on October 6, 2020. Groundwater samples collected from five of the six monitoring wells were submitted for laboratory analysis of BTEX, PAHs, and PFAS. Monitoring well GW-03 could not be located during the field event.
Significant Findings or Concerns	Monitoring well GW-03 could not be located during the September 8, 2020 inspection and is suspected to be under the parking lot gravel cover.
Recommendations	The frequency of groundwater monitoring activities should be reduced from annually to biennially. Downgradient monitoring well GW-03 should be reinstalled to determine the presence/absence of BTEX and PAH contamination at this location. The SMP requirement for all groundwater samples to be analyzed for PFAS should be discontinued. The frequency of PRRs should be reduced from every 3 years to every 4 years. The frequency of SMRs should be reduced from annually to biennially. During reporting years where both a SMR and PRR are required, a SMR will not be submitted.

1.0 Introduction

This Site Management Report (SMR) has been prepared for the Cold Spring Manufactured Gas Plant (MGP) Site (referred to as "the Site") and covers the period February 27, 2020, through December 31, 2020. This SMR was prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC or the "Department") Division of Environmental Remediation (DER) Work Assignment (WA) No. D009812-04.05 Notice to Proceed dated February 27, 2020, the NYSDEC-approved Scope of Work dated July 20, 2020, (WA No. D009812-04.05) and NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation (DER-10). A Site summary and applicable remedial program information are summarized below.

Site Information			
Site Name:	Cold Spring MGP	**NYSDEC Site No:**	340026
Site Location:	5 New Street, Cold Spring, New York, 10516	**Remedial Program:**	State Superfund Program
Site Type:	Commercial (Active marina)	**Classification:**	04
Parcel Identification(s):	48.12-1-51, Putnam County Tax Mapping	**Parcel Acreage / EE Acreage:**	1.667/0.977
Selected Remedy:	Excavation of impacted soil	**Site COC(s):**	• BTEX • PFAS • PAHs
Current Remedial Program Phase:	Post RA Site Monitoring; Site Management	**Institutional Controls:**	• ROD (2010) • EE (2013) • SMP (2019)
Post-Remediation Monitoring and Sampling Frequency:	Annual Groundwater Monitoring and Site Inspection	**Engineering Controls:**	• Cover system • Monitoring wells
Monitoring Locations:	Groundwater monitoring wells (6)	**Required Reporting**	Annual

Site Location and Groundwater Monitoring maps are provided on **Figures 1** and **2**, respectively. A detailed Site history, including the dates and descriptions of significant events, and a Custodial Record detailing known and available Site reports, are included in **Appendix A**.

2.0 Site Management and Monitoring Activities

On September 8, 2020, an annual site inspection was completed to document general site conditions and evaluate the status of the groundwater monitoring wells. The site inspection forms can be found in **Appendix B**. On October 6, 2020, TRC completed groundwater sampling activities on five of the six monitoring wells. Monitoring well GW-03 could not be located during the two field events, and therefore, a groundwater sample was not collected.

The February 2019 Site Management Plan (SMP) specifies the following routine Site activities:

- Annual Site inspection of the cover system and monitoring wells. Inspections should also be conducted following an emergency event, such as natural disasters.
- Annual groundwater monitoring for benzene, toluene, ethylbenzene, and xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260, polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8270, and per- and polyfluoroalkyl substances (PFAS) by USEPA Method 537 modified.

A summary of TRC's September and October 2020 site management field activities can be found in the table below.

Summary of 2020 Site Management Activities
September 8 and October 6, 2020

Site Management Activity	Summary of Results	Maintenance/Corrective Measure
Site wide inspection (September 8, 2020)	Four of six monitoring wells were located, with GW-03 and GW-07 unable to be located. GW-07 was believed to be located under materials in the boat launch storage area. All located wells and applicable Site cover were noted to be in good condition.	No routine maintenance or corrective measures needed at this time.
Groundwater gauging and sampling (October 6, 2020)	Five of the six monitoring wells were sampled by TRC. Monitoring well GW-03 was not located and is believed to be under the gravel cover. All collected groundwater samples were submitted to Eurofins/TestAmerica for analysis of BTEX, PAHs, and PFAS by USEPA Methods 8260, 8270, and 537 modified, respectively.	No routine maintenance or corrective measures needed at this time.

3.0 Groundwater Monitoring Summary

3.1 Groundwater Gauging

On October 6, 2020, all located monitoring wells were gauged for depth to groundwater (DTW) to determine potentiometric surface information and evaluate potential groundwater flow directions. A summary of the Site hydrogeologic conditions can be found in the table below.

October 2020 Hydrogeologic Summary			
Number of Gauged Wells	**Hydrogeologic Units**	**Hydrogeologic Strata**	**Monitoring Wells per Unit**
5	1	Overburden	5
Overburden Groundwater Elevation Range			
Lowest groundwater elevation: 2.03 feet AMSL (GW-04) Highest groundwater elevation: 4.61 feet AMSL (GW-01)			
Inferred Overburden Groundwater Flow Direction			
Southwest			

Notes:
AMSL – Above Mean Sea Level.

The groundwater gauging and elevation measurements can be found on **Table 1**. Site groundwater flow directions are presented on **Figure 2**.

3.2 Groundwater Sampling

On October 6, 2020, groundwater samples were collected from five monitoring wells (GW-01, GW-04, GW-05, GW-06, and GW-07) utilizing USEPA low-flow sampling techniques. Groundwater sampling logs can be found in **Appendix C**.

All five groundwater samples, in addition to standard quality assurance/quality control (QA/QC) samples collected at the frequencies specified in TRC's July 2020 Generic Quality Assurance Project Plan (QAPP), were submitted to the NYSDEC Callout laboratory, Eurofins/TestAmerica Laboratories of Amherst, New York (Eurofins/TestAmerica), for the analysis of BTEX, PAHs, and PFAS by USEPA Methods 8260, 8270, and 537 modified, respectively.

A summary of the monitoring well construction details and applicable October 2020 groundwater sampling information is presented in the table below:

Summary of Groundwater Monitoring and Sampling Activities October 6, 2020						
	Monitoring Well Details			2020 Groundwater Sampling Event		
Well ID	Latitude	Longitude	Screen zone (ft. bgs)	DTW (ft. below TOC)	SMP Analytes	Notes
GW-01	41° 24' 56.961" N	73° 57' 35.232" W	2 - 12	2.40	BTEX, PAHs, PFAS	
GW-03	41° 24' 54.987" N	73° 57' 37.811" W	2 - 12	NA	NA	Unable to locate
GW-04	41° 24' 55.457" N	73° 57' 38.295" W	2 - 12	2.28	BTEX, PAHs, PFAS	
GW-05	41° 24' 55.872" N	73° 57' 37.472" W	2 - 12	2.60	BTEX, PAHs, PFAS	
GW-06	41° 24' 55.923" N	73° 57' 37.254" W	3 - 12	3.06	BTEX, PAHs, PFAS	
GW-07	41° 24' 55.255" N	73° 57' 36.725" W	3 - 12	3.02	BTEX, PAHs, PFAS	

Notes:
BTEX – Benzene, toluene, ethylbenzene, and xylenes.
DTW – Depth to water.
ft. below TOC – Feet below top of casing.
ft. bgs – Feet below ground surface.
ID – Identification.
NA – Not available.
PAHs – Polycyclic aromatic hydrocarbons.
PFAS – Per- and polyfluoroalkyl substances.
SMP – Site Management Plan

A table with well construction details is additionally provided in **Appendix A**.

3.3 Groundwater Analysis and Results

Groundwater analytical data for BTEX, PAHs, and PFAS can be found in **Table 2**. The laboratory analytical summary report and data usability summary reports (DUSRs) (for the associated analytical services protocol Category B (ASP-B) laboratory reports) can be found in **Appendices D** and **E**, respectively. Detected compounds exceeding their respective NYSDEC Class GA or Guidance Values for each well are illustrated on **Figure 2**. A summary of the October 2020 groundwater analytical results for selected parameters which exceeded the respective Class GA or Guidance Values is below:

Exceedance Summary of Laboratory Analytical Results in Groundwater October 6, 2020				
Constituent	**Class GA Value***	**Concentration Range**	**Location with Highest Detection**	**Frequency Exceeding Class GA Value**
BTEX (µg/L)				
No Class GA Exceedances				
PAHs (µg/L)				
Acenaphthene	20	ND – 35	GW-07	2/5
Benzo(a)anthracene	0.002	ND – 0.48 J	GW-07	1/5
Benzo(b)fluoranthene	0.002	ND – 0.34 J	GW-07	1/5
Chrysene	0.002	ND – 0.33 J	GW-07	1/5
PFAS (ng/L)				
Perfluorooctanoic acid (PFOA)	10**	ND – 13	GW-01 & GW-06	2/5

Notes:
BTEX – Benzene, toluene, ethylbenzene, and xylenes.
J – Estimated value.
ND – Not detected above the specified quantitation limit.
ng/L – Nanograms per liter.
PAHs – Polycyclic aromatic hydrocarbons.
PFAS – Per- and polyfluoroalkyl substances.
µg/L – Micrograms per liter.
* - NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA water, June 1998 with the April 2000 Addendum.
** - Guidelines for Sampling and Analysis of PFAS, NYSDEC Part 375 Remedial Programs, October 2020.

4.0 Conclusions and Recommendations

The following conclusions and recommendations are based on the findings of the site management activities completed during this reporting period, as well as a review of information obtained from prior reports.

4.1 Conclusions

- **Compliance with the Record of Decision (ROD) and SMP:** Site and groundwater use are consistent with the restrictions set forth in the ROD and SMP. Site inspections, site inspection reports, groundwater monitoring reports and PRRs are currently completed at the frequency specified in the February 2019 SMP. The ICs operated as intended during this reporting period.
- **Performance and Effectiveness:**
    - BTEX compounds were either not detected above laboratory quantitation limits or were detected at concentrations below Class GA Values for all collected groundwater samples.
    - A number of PAH compounds exceeded Class GA Values in monitoring wells GW-04 and GW-07. Upon review of the historical groundwater data set presented in the February 2019 SMP, PAH concentrations in these two monitoring wells have increased slightly since the last monitoring event in July 2018.
    - One PFAS compound, perfluorooctanoic acid (PFOA), exceeded the Guidance Value of 10 nanograms per liter (ng/L), as found in the *October 2020 Sampling, Analysis, and Assessment of PFAS Under NYSDEC's Part 375 Remedial Programs*, in monitoring wells GW-01 (13 ng/L) and GW-06 (13 ng/L). Upon review of the historical groundwater data set presented in the February 2019 SMP, current PFOA concentrations within these two monitoring wells are similar to those detected in July 2018.
- **Protectiveness:** The remedy continued to be protective of human health and the environment during this reporting period.

4.2 Recommendations

- It is recommended that Site inspections continue annually and following severe weather events (as needed) to certify that the ICs/ECs are functioning as intended. A site inspection report should be completed following each inspection event.
- It is recommended that the groundwater monitoring frequency be reduced from annually (next scheduled for Q4 2021) to biennially (proposed for Q4 2022).
- The requirement to analyze groundwater samples for PFAS should be discontinued. The recent minor exceedances of PFOA found monitoring wells GW-01 and GW-06 are similar to those detected in July 2018. Additionally, PFAS compounds were either not detected above laboratory quantitation limits or were detected at concentrations below their respective Guidance Values in remaining downgradient monitoring wells (GW-04, GW-05, and GW-07). Based on the known historical use of the Site, it is unclear if the PFAS detections are related to the Site.

- It is recommended that monitoring well GW-03 be replaced to determine the presence/absence of BTEX and PAH contamination. This location represents the furthest on-Site downgradient monitoring well prior to the groundwater discharge to the Hudson River. It is recommended that completion of this activity be concurrent with the next scheduled groundwater sampling event.
- It is recommended that the SMR requirement be reduced from an annual to biennial basis. During reporting years where both a SMR and PRR are required, a SMR will not be submitted.
- The frequency of PRRs should be reduced from every 3 years to every 4 years. It is recommended that the certification period for the next PRR covers the reporting period between August 1, 2018 and December 31, 2022.
- The SMP should be revised to reflect the above changes/modifications if the changes are acceptable to the NYSDEC.

5.0 Future Site Activities

Based on the recommendations provided above in **Section 4.2**, the following site management activities will be completed during the current PRR reporting period (August 2018 to December 2022):

- Site Inspections – Annual (next scheduled: Q4 2021 and Q4 2022)
- Groundwater Sampling – Biennial (next scheduled: Q4 2022)
- GW-03 Replacement (next scheduled: Q4 2022)
- SMR – Biennial (no next scheduled submission during current PRR reporting period)
- PRR – Every 4 years (next scheduled: Q4 2022)

TABLES

Table 1
Summary of Depth to Water Measurements and Groundwater Elevations
Cold Spring MGP Site (Site No. 340026)
Village of Cold Spring, NY

Well ID	Screened Formation	TOC Elevation (feet AMSL)	Gauge Date	Depth to Water (feet below TOC)	Depth to Bottom (feet below TOC)	Groundwater Elev. (feet AMSL)
GW-01	Overburden	7.01	10/6/2020	2.40	12.00	4.61
GW-03*	Overburden	5.04	10/6/2020	Unable to Locate		
GW-04	Overburden	4.31	10/6/2020	2.28	11.78	2.03
GW-05	Overburden	4.96	10/6/2020	2.60	9.20	2.36
GW-06	Overburden	5.34	10/6/2020	3.06	11.78	2.28
GW-07	Overburden	5.31	10/6/2020	3.02	11.20	2.29

Notes

Elev. : Elevation.
AMSL : Above Mean Sea Level.
ID : Identification.
TOC : Top of Casing.

Table 2
Summary of Groundwater Analytical Results (October 2020)
Cold Spring MGP Site (Site No. 340026)
Village of Cold Spring, NY

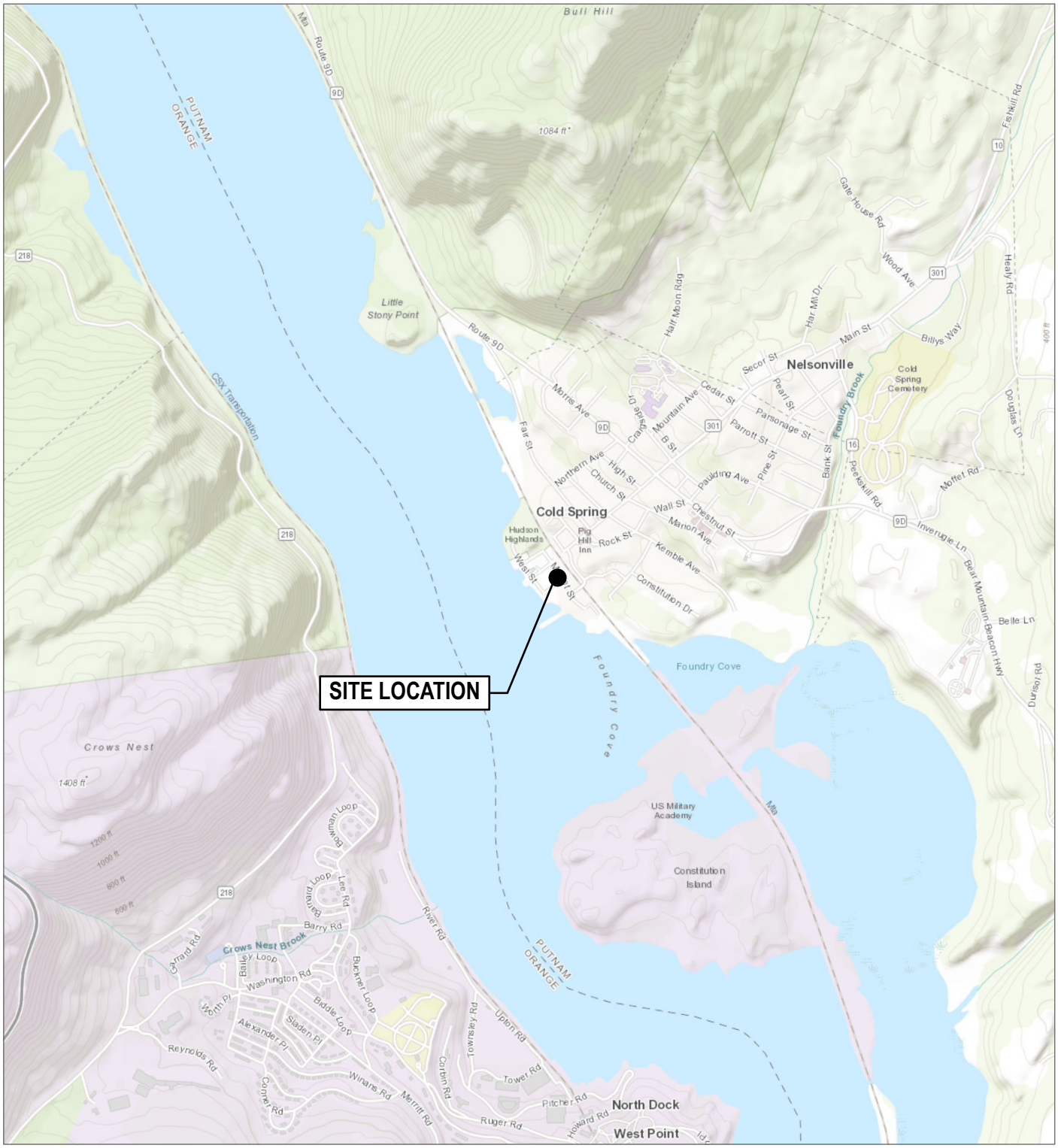
Sample Location:			**GW-1**	**GW-4**	**GW-5**	**GW-6**		**GW-7**
Sample Name:			GW-01	GW-04	GW-05	GW-06	DUP	GW-07
Lab Sample ID:			480-176138-3	480-176138-4	480-176138-2	480-176138-1	480-176138-6	480-176138-5
Sample Date:			10/06/2020	10/06/2020	10/06/2020	10/06/2020	10/06/2020	10/06/2020
Analyte	**Unit**	**GWQS***					Field Dup	
VOCs								
Benzene	ug/L	1	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	0.94 J
Toluene	ug/L	5	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U
Ethylbenzene	ug/L	5	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	0.78 J
m,p-Xylene	ug/L	5	2.0 U	2.0 U	4.0 U	4.0 U	4.0 U	2.0 U
o-Xylene	ug/L	5	1.0 U	1.2	2.0 U	2.0 U	2.0 U	1.0 U
Xylenes, total	ug/L	5	2.0 U	1.2 J	4.0 U	4.0 U	4.0 U	2.0 U
Total BTEX	ug/L	NC	2.0 U	1.2 J	4.0 U	4.0 U	4.0 U	1.7 J
PAHs								
Acenaphthene	ug/L	20	5.0 U	**33**	4.7 J	14	11	**35**
Acenaphthylene	ug/L	NC	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.8 J
Anthracene	ug/L	50	5.0 U	1.8 J	5.0 U	1.1 J	0.96 J	0.97 J
Benzo(a)anthracene	ug/L	0.002	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**0.48 J**
Benzo(a)pyrene	ug/L	ND	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(b)fluoranthene	ug/L	0.002	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**0.34 J**
Benzo(g,h,i)perylene	ug/L	NC	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(k)fluoranthene	ug/L	0.002	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chrysene	ug/L	0.002	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	**0.33 J**
Dibenz(a,h)anthracene	ug/L	NC	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Fluoranthene	ug/L	50	5.0 U	1.3 J	5.0 U	1.9 J	1.4 J	6.1
Fluorene	ug/L	50	5.0 U	6.7	5.0 U	0.85 J	0.92 J	14
Indeno(1,2,3-cd)pyrene	ug/L	0.002	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	10	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	ug/L	50	5.0 U	6.1	5.0 U	5.0 U	0.50 J	5.0 U
Pyrene	ug/L	50	5.0 U	1.4 J	5.0 U	2.6 J	1.8 J	3.5 J
PFAS								
Perfluorobutanoic acid (PFBA)	ng/L	100**	6.1	8.7	22	15	14	29
Perfluoropentanoic acid (PFPeA)	ng/L	100**	8.1	5.7	6.2	5.2	5.2	3.0
Perfluorohexanoic acid (PFHxA)	ng/L	100**	7.7	4.2	5.7	3.6	3.6	1.9
Perfluoroheptanoic acid (PFHpA)	ng/L	100**	5.2	2.8	2.8	3.0	2.7	1.1 J
Perfluorooctanoic acid (PFOA)	ng/L	10**	**13**	9.8	7.4	**13**	**12**	2.2
Perfluorononanoic acid (PFNA)	ng/L	100**	0.58 J	0.69 J	0.86 J	1.9	2.5	0.28 J
Perfluorodecanoic acid (PFDA)	ng/L	100**	1.7 U	1.9 U	0.72 J	1.8 U	1.8 U	1.8 U
Perfluoroundecanoic acid (PFUnA)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Perfluorododecanoic acid (PFDoA)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Perfluorotridecanoic acid (PFTriA)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Perfluorotetradecanoic acid (PFTeA)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Perfluorobutanesulfonic acid (PFBS)	ng/L	100**	6.4	7.6	4.3	10	12	2.1
Perfluorohexanesulfonic acid (PFHxS)	ng/L	100**	6.1	3.6	3.2	3.5	3.4	1.7 J
Perfluoroheptanesulfonic acid (PFHpS)	ng/L	100**	0.24 J	1.9 U	1.8 U	0.20 J	0.17 J	1.8 U
Perfluorodecanesulfonic acid (PFDS)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Perfluorooctanesulfonic acid (PFOS)	ng/L	10**	8.5	6.9	5.5 J	8.3	8.1	1.5 J
Perfluorooctane Sulfonamide (PFOSA)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
2-(N-methyl perfluorooctanesulfonamido) acetic acid (N-MeFOSAA)	ng/L	100**	4.4 U	4.6 U	4.5 U	4.5 U	4.4 U	4.5 U
N-Ethyl-N-((heptadecafluorooctyl)sulphonyl) glycine (N-EtFOSAA)	ng/L	100**	4.4 U	4.6 U	4.5 U	4.5 U	4.4 U	4.5 U
6:2 Perfluorooctane Sulfonate (6:2 FTS)	ng/L	100**	4.4 U	4.6 U	4.5 U	12 J	20 J	4.5 U
8:2 Perfluorodecane Sulfonate (8:2 FTS)	ng/L	100**	1.7 U	1.9 U	1.8 U	1.8 U	1.8 U	1.8 U
Total PFAS	ng/L	500**	61.9 J	50.0 J	58.7 J	75.7 J	83.7 J	42.8 J

Table 2
Summary of Groundwater Analytical Results (October 2020)
Cold Spring MGP Site (Site No. 340026)
Village of Cold Spring, NY

Notes:

BTEX - Benzene, Toluene, Ethylbenzene, Xylenes.
GWQS - Groundwater Quality Standard.
J - Estimated value.
NC - No NYSDEC standards exist for this analyte.
ng/L - nanograms per liter.
PAHs - Polycyclic Aromatic Hydrocarbons.
PFAS - Per- and Polyfluoroalkyl Substances.
U - Analyte was not detected at specified quantitation limit.
ug/L - micrograms per liter.
VOCs - Volatile Organic Compounds.
* - NYSDEC Ambient Water Quality Standards and Guidance Values for Class GA water, June 1998 with the April 2000 Addendum.
** - Guidelines for Sampling and Analysis of PFAS, NYSDEC Part 375 Remedial Programs, October 2020.
Bold - concentration exceeds the listed NYSDEC standard, guidance, or screening value.

FIGURES



● SITE LOCATION

BASE MAP: USGS COLOR ORTHO IMAGERY
DATA SOURCES: TRC

N

0 1,000 2,000

FEET

1:24,000 1" = 2,000'

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
COLD SPRING MGP - SITE NO. 340026
5 NEW STREET
COLD SPRING, NEW YORK

TITLE:

SITE LOCATION MAP

DRAWN BY:	L. LILL	PROJ. NO.:	386554 PHASE 5
CHECKED BY:	J. KING		
APPROVED BY:	N. KRANES		**FIGURE 1**
DATE:	OCTOBER 2020		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: sitelocation

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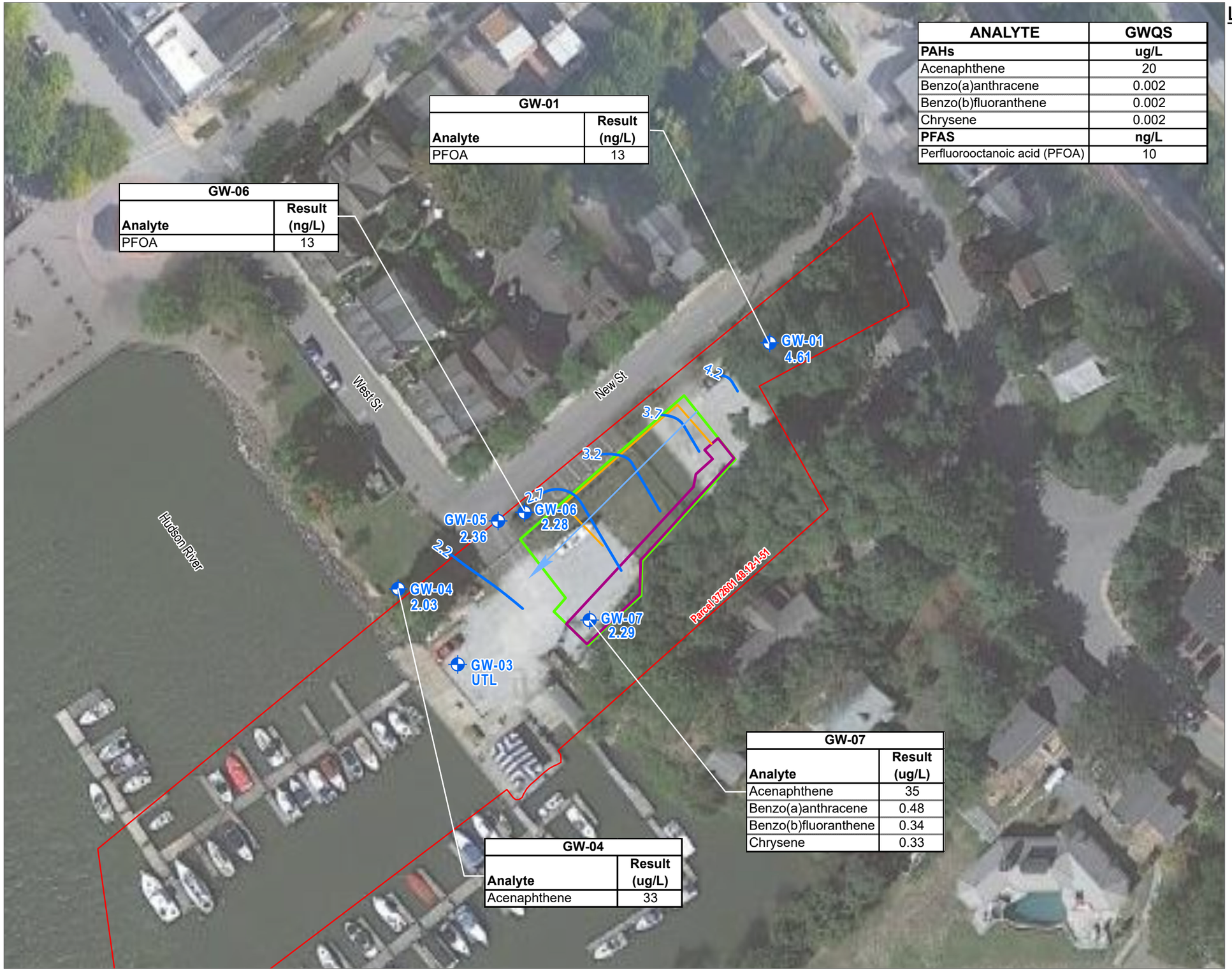

GW-01	
Analyte	Result (ng/L)
PFOA	13

GW-06	
Analyte	Result (ng/L)
PFOA	13

ANALYTE	GWQS
PAHs	**ug/L**
Acenaphthene	20
Benzo(a)anthracene	0.002
Benzo(b)fluoranthene	0.002
Chrysene	0.002
PFAS	**ng/L**
Perfluorooctanoic acid (PFOA)	10

GW-07	
Analyte	Result (ug/L)
Acenaphthene	35
Benzo(a)anthracene	0.48
Benzo(b)fluoranthene	0.34
Chrysene	0.33

GW-04	
Analyte	Result (ug/L)
Acenaphthene	33

LEGEND

- MONITORING WELL
- GROUNDWATER ELEVATION CONTOUR (0.5' INTERVALS)
- EXCAVATION LIMITS - DECEMBER 2015 - JUNE 2016 (LOCATION APPROXIMATE)
- FLOWABLE FILL WALL - JANUARY 2016 (LOCATION APPROXIMATE)
- SHEET PILING - DECEMBER 2015 - MAY 2016 (LOCATION APPROXIMATE)
- TAX PARCEL BOUNDARY
- GROUNDWATER FLOW DIRECTION

NOTES:
BTEX - benzene, toluene, ethyl benzene, and total xylenes
PAHs - polycyclic aromatic hydrocarbons
PFAS - per- and polyfluoroalkyl substances
UTL - Unable to locate
ug/L - micrograms per liter
ng/L - nanograms per liter
GWQS - Groundwater Water Quality Standard: NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values, Class GA, June 1998
NYSDEC Sampling, Analysis, and Assessment of PFAS, October 2020
*Well GW-03 has not been included in the groundwater contours as it was unable to be located.
Potentiometric surface elevations and groundwater samples were collected on October 6, 2020.
All groundwater samples were analyzed for BTEX, PAHs, and PFAS.
Elevation datum: North American Vertical Datum of 1988 (NAVD 88).
For figure clarity:
1) Constituents and individual compounds not shown were either not detected or did not exceed their respective GWQS.
2) Laboratory analytical data qualifiers have been omitted, refer to the summary data tables for analytical details regarding qualifiers.

N

1:725
1" = 60'

BASE MAP: GOOGLE SATELLITE 2020
DATA SOURCES: TRC

0 50 100 FEET

PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
COLD SPRING MGP SITE - SITE NO. 340026
5 NEW STREET
COLD SPRING, NEW YORK

TITLE:
GROUNDWATER MONITORING MAP (OCTOBER 6, 2020)

DRAWN BY:	L. LILL	PROJ. NO.:	386554 PHASE 5
CHECKED BY:	J. KING		
APPROVED BY:	K. SULLIVAN		**FIGURE 2**
DATE:	FEBRUARY 2021		

TRC
10 Maxwell Drive
Clifton Park, NY 12065
Phone: 518-348-1190

FILE: groundwatercontours

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet; Map Rotation: 0
Saved By: LLILL on 2/7/2021 1:40:21 PM; File Path: T:\PROJECTS\NY\SPECS\386554_05_ColdSpring\MGP\2-APRX\groundwatercontours\groundwatercontours.aprx; Layout Name: gwcontours

APPENDIX A

SITE HISTORY, CUSTODIAL RECORD, AND MONITORING WELL SUMMARY

CUSTODIAL RECORD

PERTINENT SITE DOCUMENTS

COLD SPRING MGP (NYSDEC SITE NO. 340026)

New York State Department of Environmental Conservation, *Preliminary Site Assessment*, June 2005.

New York State Department of Environmental Conservation, *Site Characterization Report*, July 2005.

Dvirka and Bartilucci, *Site Investigation/Remedial Alternatives Report*, October 2009.

New York State Department of Environmental Conservation, *Record of Decision*, February 2010.

New York State Department of Environmental Conservation and Village of Cold Spring, *Environmental Easement*, January 2013.

Groundwater and Environmental Services, Inc., *Site Characterization Report*, 2013

URS Corporation, *Pre-Design Investigation Soil Boring Program Report*, February 2014.

URS Corporation, *Design Analysis Report*, April 2015.

URS Corporation, *Pre-Design Investigation Report*, September 2014.

URS Corporation, *Pre-Design Geotechnical Summary Report*, September 2014.

URS Corporation, *Final Engineering Report*, September 2017.

URS Corporation, *Site Management Plan,* February 2019.

SITE HISTORY

COLD SPRING MGP SITE (NYSDEC SITE NO. 340026)

Date	Description
Mid-to late 1800's	The Site operated as a manufactured gas plant (MGP), which used a "coal carbonization" process which involved heating of coal in a closed vessel with minimal air contact, converting the coal to coke, releasing a combustible gas and was piped into the surrounding community for lighting, heating, and cooking purposes. The principal waste product was coal tar, which is a dark brown to black liquid with an odor similar to driveway sealer.
1887	The earliest available fire insurance map for the site is dated 1887. This map states that the retort building was vacant, which indicates that the plant was no longer operating at that time.
February 2005	A shallow archaeological excavation at One Main Street (the former lumber yard, across the street from the MGP site) encountered black-stained soil. This was reported to the New York State Department of Environmental Conservation (NYSDEC) as a petroleum spill (Spill #04-12054). An environmental contractor was hired by the site owner at One Main Street to investigate the suspected spill. Soil samples were collected from the four archaeological test pits and also from four new soil boring locations on the One Main Street site and submitted for laboratory analysis.
May 2005	A site characterization investigation was conducted by the NYSDEC. Eleven soil borings were completed, and three of these borings were completed as monitoring wells. Five soil samples and three groundwater samples were collected and analyzed for site-related contamination.
June 2005	The June 2005 Preliminary Site Assessment Report confirmed the existence of the former MGP Site and recommended a full Remedial Investigation to fully characterize the nature and extent of contamination at the site
June 2006	The small area of contamination on the lumber yard property was remediated under NYSDEC oversight in June of 2006. All MGP related contamination was excavated and transported off-site for treatment/disposal. Confirmation samples did not detect any remaining chemicals in the sidewalls or bottom of the excavation. The property was subsequently redeveloped for residential use.
April 2007	The Village of Cold Spring applied for admittance into the Environmental Restoration Program (ERP), and on August 9, 2007, their application was approved. The Remedial Investigation and alternatives analysis were carried out by the Village under this program.
August 2007	The Village of Cold Spring entered a State Assistance Contract (SAC) with the NYSDEC to remediate the Site (SAC No. C303647).
2008 and 2014	Geophysical surveys were performed to locate and identify subsurface structures related to the MGP. These surveys located a 35-foot diameter concrete subsurface structure identified as the foundation of a former gas holder tanks. The surveys also

	identified a rectangular structure (approximately 20 feet by 30 feet), believed to be the foundation of the former MGP generator house.
April 2009	The results of the Dvirka and Bartilucci Site Investigation confirmed that only soil and groundwater were targeted for remediation. Total BTEX concentrations in the subsurface soil ranged from non-detect to 1,286 parts per million (ppm). The highest PAH and BTEX levels were in the area of the subsurface coal tar impacts.
February 2010	The Record of Decision (ROD) for the Site was signed that specified the removal of soil in the source area located east of the boat club building, removal of subsurface MGP structures, and disposal of all excavated materials off site at a permitted facility.
April 2013	A Subsurface Investigation Report (GES, April 2013) documented the October 2012 field activities. GES installed six soil borings to estimated depths of 12 feet below ground surface. Two of the borings were converted to monitoring wells. One soil sample from each boring was submitted for chemical analysis. Every soil sample had at least one Restricted Residential exceedance for PAHs. Total PAH concentrations in soil ranged from 14.9 ppm to 556 ppm. There were no BTEX exceedances in the soil samples. Groundwater samples were collected from four existing monitoring wells (GW-01, GW-02, GW-04, and GW-05). The results showed an exceedance of groundwater quality for organic compounds only at GW-04.
October 2013	The NYSDEC agreed to the request by the Village of Cold Spring that the selected remedy presented in the ROD be expanded to include demolition of the boat club building to maximize the safe removal of coal tar in the subsurface.
2014	The results of the 2014 URS Site Investigation showed total PAH concentrations ranging from non-detect to 3,822 ppm.
October 2015 - August 2016	Remediation was performed on the Site that consisted of the following: • Demolition and offsite disposal of the boat club building; • Relocation of existing utilities; • Installation of sheet piling, which was left in place; • Installation of temporary containment structure (TCS) and vapor management system (VMS); • Excavation and offsite disposal of 8,990 tons of contaminated soil and debris; • The average depth of excavation was 12 feet below ground surface; • Disposal of contaminated soil and debris at the City of Albany Waste Solid Waste Management Facility (4,805 tons) and EMSI of New York, Inc. (4,185 tons); • Collection of post-excavation documentation samples; • Placement of a demarcation barrier consisting of non-woven geotextile fabric; • Backfill the excavation with 6,858 tons of clean soil, and No. 2 and No. 4 stone; • Placement of 540 cubic yards of flowable fill; and • Restoration of the Site with 6,120 square feet of seeded area 10,910 square feet of gravel parking area.

New York State Department of Environmental Conservation
Cold Spring MGP (Site No. 340026) - Village of Cold Spring, NY
Monitoring Well Construction Summary

Well ID	Installation Date	Well Dia. (inches)	Well Material	Total Depth (feet bgs)	Well Location	*Screen*			*Elevation (feet AMSL)*				*Location*	
						Top (feet bgs)	Bottom (feet bgs)	Length (feet)	Casing Top	Ground Surface	Screen		Latitude	Longitude
											Top	Bottom		
GW-01	10/2/2008	2	PVC	12.0	Upgradient	2.00	12.00	10.00	6.82	7.01	4.70	-5.30	41° 24' 56.961" N	73° 57' 35.232" W
GW-03	10/2/2008	2	PVC	12.0	Downgradient	2.00	12.00	10.00	5.04	5.36	3.00	-7.00	41° 24' 54.987" N	73° 57' 37.811" W
GW-04	10/2/2008	2	PVC	12.0	Downgradient	2.00	12.00	10.00	4.32	4.65	2.50	-7.60	41° 24' 55.457" N	73° 57' 38.295" W
GW-05	10/2/2008	2	PVC	12.0	Downgradient	2.00	12.00	10.00	4.96	5.36	3.40	-6.60	41° 24' 55.872" N	73° 57' 37.472" W
GW-06	8/4/2016	2	PVC	12.5	Downgradient	3.00	12.00	9.00	5.34	5.68	2.70	-6.30	41° 24' 55.923" N	73° 57' 37.254" W
GW-07	8/4/2016	2	PVC	12.25	Downgradient	3.00	12.00	9.00	5.31	5.82	2.80	-6.20	41° 24' 55.255" N	73° 57' 36.725" W

Notes
AMSL : above mean sea level.
feet bgs : feet below ground surface.
PVC : polyvinyl chloride.

APPENDIX B

SITE INSPECTION FORMS AND DAILY FIELD REPORTS

DAILY INSPECTION REPORT

Report No. 01 **Cold Spring MGP - NYSDEC Site No. 340026** Date: 10/06/2020

NYSDEC Division of Environmental Remediation					**NYSDEC Contract No. D009812** Superintendent: Andrew Fishman NYSDEC PM: Brianna Scharf Consultant PM: Justin King Consultant Site Inspectors: Andrew Fishman and Lexi Lill
Site Location: Cold Spring, New York					
Weather Conditions					
General Description	Clear	AM	Clear	PM	
Temperature	40's	AM	60's	PM	
Wind	2-5 mph	AM	2-5 mph	PM	

Health & Safety **If any box below is checked "Yes", provide explanation under "Health & Safety Comments".**			
Were there any changes to the Health & Safety Plan?	*Yes	No X	NA
Were there any exceedances of the perimeter air monitoring reported on this date?	*Yes	No X	NA
Were there any nuisance issues reported/observed on this date?	*Yes	No X	NA

Health & Safety Comments

No injuries or accidents to note. Main concerns include: Fast moving waters, uneven ground, and slips, trips and falls.

Summary of Work Performed	Arrived at site:	08:00	Departed Site:	15:30

TRC arrived on site and gauged/sampled monitoring wells GW-01, GW-04, GW-05, GW-06, and GW-07. GW-03 could not be located and is believed to be under the parking area gravel cover. TRC left site following completion of groundwater sampling activities.

Equipment/Material Tracking **If any box below is checked "Yes", provide explanation under "Material Tracking Comments".**			
Were there any vehicles which did not display proper D.O.T numbers and placards?	*Yes	No X	NA
Were there any vehicles which were not tarped?	* Yes	No X	NA
Were there any vehicles which were not decontaminated prior to exiting the work site?	* Yes	No	NA X

Personnel and Equipment

Individual	Company	Trade	Total Hours
Andrew Fishman	TRC	Contractor	7.5
Lexie Lill	TRC	Contractor	7.5

Equipment Description	Contractor/Vendor	Quantity	Used
MiniRAE 3000	Pine Services	1	6
Horiba U-52	Pine Services	1	6
Peri Pump	Pine Services	1	6
Interface Probe	Pine Services	1	6
Schonstedt GA52 CX Magnetometer	Pine Services	1	6

Material Description	Imported/ Delivered to Site	Exported off Site	Waste Profile (If Applicable)	Source or Disposal Facility (If Applicable)	Daily Loads	Daily Weight (tons)*

*On-Site scale for off-site shipment, delivery ticket for material received

Equipment/Material Tracking Comments:

Visitors to Site

Name	Representing	Entered Exclusion/CRZ Zone	
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No
		Yes	No

Site Representatives

Name	Representing

Project Schedule Comments

Issues Pending

Interaction with Public, Property Owners, Media, etc.

Include (insert) figures with markups showing location of work and job progress

Site Photographs (Descriptions Below)

TRC sampling GW-04.

Photo of GW-01.

Photo of GW-07 buried under gravel.

Site Inspector(s): Andrew Fishman

Date: 10/06/2020

DAILY HEALTH CHECKLIST

Is social distancing being practiced?	Yes ☒	No ☐
Is the tail gate safety meeting held outdoors?	Yes ☒	No ☐
Are remote/call in job meetings being held in lieu of meeting in person where possible?	Yes ☒	No ☐
Were personal protective gloves, masks, and eye protection being used?	Yes ☒	No ☐
Are sanitizing wipes, wash stations or spray available?	Yes ☒	No ☐
Have any workers/visitors been excluded based on close contact with individuals diagnosed with COVID-19, have recently traveled to restricted areas or countries, or are symptomatic (fever, chills, cough/shortness of breath)?	Yes ☐	No ☒
Comments:		

REMEDIAL ACTIVITIES AT PROPERTIES

1. Have anyone at this location been tested and confirmed to have COVID-19?	Yes ☐	No ☒
2. Is anyone at this location isolated or quarantined for COVID-19?	Yes ☐	No ☒
3. Has anyone at this location had contact with anyone known to have COVID-19 in the past 14 days?	Yes ☐	No ☒
4. Does anyone at this location have any symptoms of a respiratory infection (e.g., cough, sore throat, fever, or shortness of breath)?	Yes ☐	No ☒
5. Does the Department and its contractors have your permission to enter the property at this time?	Yes ☐	No ☒
If Yes to any of 1-4 above: • If it is not critical that service/entry be carried out immediately and can be postponed until the risk of COVID-19 is lower, or can be accomplished remotely/without entry, postpone or conduct service without entry. • If it is critical that service/entry be carried out immediately, advise occupants that as a precaution and for our own protection, project personnel will be donning appropriate PPE* (including respiratory protection) - and do so prior to entry.	Yes ☐	No ☐
Comments:		

NUISANCE CHECKLIST

Were there any community complaints related to work on this date?	Yes ☐	No ☒	N/A☐
Were there any odors detected on this date?	Yes ☐	No ☒	N/A☐
Was noise outside specification and/or above background on this date?	Yes ☐	No ☒	N/A☐
Were vibration readings outside specification and/or above background on this date?	Yes ☐	No ☐	N/A☒
Any visible dust observed beyond the work perimeter on this date?	Yes ☐	No ☒	N/A☐
Any visible contrast (turbidity) beyond engineering controls observed on this date?	Yes ☐	No ☒	N/A☐
Was turbidity checked at the Montauk Highway outfall?	AM ☐	PM ☐	N/A☒
Were any property owners NOT provided advance notice for work performed on this property on this date?	Yes ☐	No ☐	N/A☒
Was the temporary fabric structure closed at the end of the day?	Yes ☐	No ☐	N/A☒
Has Contractor failed to protect all foundations and structures adjacent to and adjoining the site which are affected by the excavations or other operations connected with performance of the Work?	Yes ☐	No ☐	N/A☒
If yes, has Contractor been notified?	Yes ☐	No ☐	N/A☐
Comments:			

COLD SPRING MGP SITE
NYSDEC SITE NO. 340026
INSPECTION FORM

GENERAL INFORMATION

Date:	9/8/2020	**Inspector:**	Lexie Lill
Weather:	Clear, sunny	**Signature:**	Lexie Lill
Temperature:	70's	**Company:**	TRC
Season (circle one):	Winter	Spring	Summer (circled) Fall

SITE INSPECTION LOG SHEET*

Evidence of Site-Wide Disturbance(s)	Yes / No (circled)	**Description of Disturbance(s)**	
Evidence of Surface Soil Disturbance(s)	Yes / No (circled)	**Description of Disturbance(s)**	
Evidence of Excavation	Yes / No (circled)	**Description of Excavation**	
Evidence of Building Construction	Yes / No (circled)	**Description of Building Construction**	
Evidence of Change in Site Use	Yes / No (circled)	**Description of New/Additional Site Use**	
Comments:			

* If answering Yes, attach map showing locations and any other information as required.

COLD SPRING MGP SITE
NYSDEC SITE NO. 340026
INSPECTION FORM

WELL INSPECTION LOG SHEET (provide for each well inspected)

Well ID:	GW-01	**Time:**	9:15

Area	**Item Inspected**	**Description of Condition (attach additional sheet if needed)**	**Additional Maintenance Needed?**	**Inspector's Initials**
Exterior	**Casing and collar**	In good condition.	**Yes / (No)**	LL
	Well label	Well label missing.	**(Yes) / No**	LL
	Lock and Cover	Cover in good condition. Lock is missing.	**(Yes) / No**	LL
Interior	**Well cap**	In good condition.	**Yes / (No)**	LL
	Well riser	No riser - flush mount cover. Flush mount cover in good condition.	**Yes / (No)**	LL
	Annular space	In good condition.	**Yes / (No)**	LL
Comments:				

COLD SPRING MGP SITE
NYSDEC SITE NO. 340026
INSPECTION FORM

WELL INSPECTION LOG SHEET (provide for each well inspected)

Well ID:	GW-04	**Time:**	9:30

Area	**Item Inspected**	**Description of Condition (attach additional sheet if needed)**	**Additional Maintenance Needed?**	**Inspector's Initials**
Exterior	**Casing and collar**	In good condition.	**Yes / (No)**	LL
	Well label	Well label missing.	**(Yes) / No**	LL
	Lock and Cover	Cover in good condition. Lock is missing.	**(Yes) / No**	LL
Interior	**Well cap**	In good condition.	**Yes / (No)**	LL
	Well riser	No riser - flush mount cover. Flush mount cover in good condition.	**Yes / (No)**	LL
	Annular space	In good condition.	**Yes / (No)**	LL
Comments:				

COLD SPRING MGP SITE
NYSDEC SITE NO. 340026
INSPECTION FORM

WELL INSPECTION LOG SHEET (provide for each well inspected)

Well ID:	GW-05	**Time:**	10:00

Area	**Item Inspected**	**Description of Condition (attach additional sheet if needed)**	**Additional Maintenance Needed?**	**Inspector's Initials**
Exterior	**Casing and collar**	In good condition.	**Yes / (No)**	LL
	Well label	Well label missing.	**(Yes) / No**	LL
	Lock and Cover	Cover in good condition. Lock is missing.	**(Yes) / No**	LL
Interior	**Well cap**	In good condition.	**Yes / (No)**	LL
	Well riser	No riser - flush mount cover. Flush mount cover in good condition.	**Yes / (No)**	LL
	Annular space	In good condition.	**Yes / (No)**	LL
Comments:				

COLD SPRING MGP SITE
NYSDEC SITE NO. 340026
INSPECTION FORM

WELL INSPECTION LOG SHEET (provide for each well inspected)

Well ID:	GW-06	**Time:**	9:45

Area	**Item Inspected**	**Description of Condition (attach additional sheet if needed)**	**Additional Maintenance Needed?**	**Inspector's Initials**
Exterior	**Casing and collar**	In good condition.	**Yes / (No)**	LL
	Well label	Well label missing.	**(Yes) / No**	LL
	Lock and Cover	Cover in satisfactory condition. Lock is missing.	**(Yes) / No**	LL
Interior	**Well cap**	In good condition.	**Yes / (No)**	LL
	Well riser	No riser - flush mount cover. Flush mount cover in satisfactory condition.	**Yes / (No)**	LL
	Annular space	In good condition.	**Yes / (No)**	LL
Comments:				

APPENDIX C

GROUNDWATER SAMPLING LOGS – OCTOBER 2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Cold Spring MGP
PROJECT NUMBER	386554.0000.0000
SAMPLE ID	GW-01
SAMPLE TIME	12:20

LOCATION ID	GW-01
DATE	10/6/2020
START TIME	11:00
END TIME	12:25
SITE NAME/NUMBER	340026
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED		X	
COLLAR	X		

INITIAL DTW (BMP)	2.4 FT	**FINAL DTW (BMP)**	3.23 FT	**PROT. CASING STICKUP (AGS)**	- FT	**TOC/TOR DIFFERENCE**	- FT
WELL DEPTH (BMP)	12 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	- SEC
WATER COLUMN	9.6 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.140 GAL	**PID WELL MOUTH**	0.0 PPM	**DISCHARGE TIMER SETTING**	- SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.57 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	4.88 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	- PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
11:00	**BEGIN PURGING**									
11:15	3.44	250	19.72	1.13	6.11	8.27	68.6	6	10	
11:20	4.39	250	19.68	1.12	6.12	5.03	61.7	12	10	
11:25	2.85	250	20.38	1.10	6.02	5.67	52.1	24	10	
11:30	2.50	250	21.07	1.04	6.30	8.88	39.7	22	10	
11:35	2.43	250	21.32	0.695	6.57	11.66	19.6	12	10	
11:40	2.40	250	21.41	0.469	6.70	12.55	13.1	7	10	
11:45	2.42	250	21.49	0.47	6.81	13.40	12.2	4	10	
12:00	3.44	250	20.17	1.11	6.22	5.58	42.6	41	10	
12:05	3.21	250	20.19	1.12	6.25	4.17	34.5	39	10	
12:10	3.26	250	20.09	1.12	6.20	3.62	22.9	42	10	
12:15	3.23	250	20.00	1.12	6.17	3.66	17.4	45	10	
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])										
			20	**1.12**	**6.2**	**3.7**	**17.4**	**45**		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER Heron
- [X] PID MiniRAE 3000
- [X] WQ METER Horiba U-52
- [X] TURB. METER Horiba U-52
- [X] PUMP Pine Peri Pump
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	BTEX	8260	No	HCl	25 ml	Yes		See COC
X	PAHs	8270	No	None	250 ml	Yes		See COC
X	PFAS	537 mod.	No	None	250 ml	Yes		See COC

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [ ] NO [X]

NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NUMBER OF GALLONS GENERATED: 4.88

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Lexie Lill Print Name: Lexie Lill

Checked By: Justin King Date: 11/16/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Cold Spring MGP
PROJECT NUMBER	386554.0000.0000
SAMPLE ID	GW-04
SAMPLE TIME	13:25

LOCATION ID	GW-04
DATE	10/6/2020
START TIME	12:35
END TIME	13:30
SITE NAME/NUMBER	340026
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED		X	
COLLAR	X		

INITIAL DTW (BMP)	2.28 FT	**FINAL DTW (BMP)**	2.32 FT	**PROT. CASING STICKUP (AGS)**	- FT	**TOC/TOR DIFFERENCE**	- FT
WELL DEPTH (BMP)	11.78 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	- SEC
WATER COLUMN	9.5 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.007 GAL	**PID WELL MOUTH**	32.2 PPM	**DISCHARGE TIMER SETTING**	- SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.56 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	- PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
12:35	**BEGIN PURGING**									
12:45	2.79	250	20.72	1.89	6.44	7.56	9.5	-165	8	
12:50	2.48	250	20.89	1.92	6.43	2.25	28.3	-167	8	
12:55	2.45	250	20.96	1.93	6.44	1.80	30.1	-168	8	
13:00	2.45	250	21.05	1.93	6.44	1.45	24.0	-169	8	
13:05	2.42	250	21.07	1.93	6.43	1.27	21.7	-170	8	
13:10	2.35	250	21.15	1.93	6.44	1.17	19.9	-171	8	
13:15	2.32	250	21.18	1.93	6.44	1.09	18.7	-172	8	
13:20	2.32	250	21.24	1.94	6.44	1.07	18.3	-172	8	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

21	**1.94**	**6.4**	**1.1**	**18.3**	**-170**	

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER Heron
- [X] PID MiniRAE 3000
- [X] WQ METER Horiba U-52
- [X] TURB. METER Horiba U-52
- [X] PUMP Pine Peri Pump
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	BTEX	8260	No	HCl	25 ml	Yes		See COC
X	PAHs	8270	No	None	250 ml	Yes		See COC
X	PFAS	537 mod.	No	None	250 ml	Yes		See COC

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED: YES [ ] NO [X]

NO-PURGE METHOD UTILIZED: YES [ ] NO [ ]

NUMBER OF GALLONS GENERATED: 2.93

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Lexie Lill Print Name: Lexie Lill

Checked By: Justin King Date: 11/16/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Cold Spring MGP
PROJECT NUMBER	386554.0000.0000
SAMPLE ID	GW-05
SAMPLE TIME	10:40

LOCATION ID	GW-05
DATE	10/6/2020
START TIME	9:50
END TIME	10:45
SITE NAME/NUMBER	340026
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED		X	
COLLAR	X		

INITIAL DTW (BMP)	2.6 FT	**FINAL DTW (BMP)**	3.35 FT	**PROT. CASING STICKUP (AGS)**	- FT	**TOC/TOR DIFFERENCE**	- FT
WELL DEPTH (BMP)	9.2 FT	**SCREEN LENGTH**	10 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	- SEC
WATER COLUMN	6.6 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.123 GAL	**PID WELL MOUTH**	3.4 PPM	**DISCHARGE TIMER SETTING**	- SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.08 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.93 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	- PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
9:50	**BEGIN PURGING**									
9:55	3.93	250	23.83	0.503	6.77	3.29	76.0	-140	8	
10:00	3.90	250	23.92	0.755	6.54	1.73	39.2	-162	8	
10:05	3.77	250	24.35	1.06	6.65	1.39	40.6	-182	8	
10:10	3.79	250	24.37	0.704	6.55	1.40	37.4	-154	8	
10:15	3.44	250	24.16	0.974	6.72	1.20	33.4	-191	8	
10:20	3.33	250	24.20	1.09	6.75	1.15	31.5	-196	8	
10:25	3.34	250	24.28	1.20	6.76	1.53	29.2	-200	8	
10:30	3.39	250	24.40	1.26	6.77	1.19	26.1	-202	8	
10:35	3.35	250	24.48	1.31	6.78	1.12	25.9	-204	8	
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])			**24**	**1.31**	**6.8**	**1.1**	**25.9**	**-200**		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER Heron
- [X] PID MiniRAE 3000
- [X] WQ METER Horiba U-52
- [X] TURB. METER Horiba U-52
- [X] PUMP Pine Peri Pump
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	BTEX	8260	No	HCl	25 ml	Yes		See COC
X	PAHs	8270	No	None	250 ml	Yes		See COC
X	PFAS	537 mod.	No	None	250 ml	Yes		See COC

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED — YES [ ] NO [X]

NO-PURGE METHOD UTILIZED — YES [ ] NO [ ]

NUMBER OF GALLONS GENERATED: 2.93

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Lexie Lill Print Name: Lexie Lill

Checked By: Justin King Date: 11/16/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Cold Spring MGP
PROJECT NUMBER	386554.0000.0000
SAMPLE ID	GW-06
SAMPLE TIME	9:25

LOCATION ID	GW-06
DATE	10/6/2020
START TIME	8:40
END TIME	9:25
SITE NAME/NUMBER	340026
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED		X	
COLLAR	X		

INITIAL DTW (BMP)	3.06 FT	**FINAL DTW (BMP)**	3.12 FT	**PROT. CASING STICKUP (AGS)**	- FT	**TOC/TOR DIFFERENCE**	- FT
WELL DEPTH (BMP)	11.78 FT	**SCREEN LENGTH**	9 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	- SEC
WATER COLUMN	8.72 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.010 GAL	**PID WELL MOUTH**	6.2 PPM	**DISCHARGE TIMER SETTING**	- SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.43 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	2.60 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	- PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
8:40	**BEGIN PURGING**									
8:45	3.09	250	22.80	1.47	6.25	4.50	11.2	-120	10	
8:50	3.13	250	23.60	1.47	6.31	2.82	1.4	-140	10	
8:55	3.15	250	23.21	1.48	6.42	2.55	0	-149	10	
9:00	3.13	250	23.04	1.48	6.41	2.30	0	-148	10	
9:05	3.11	250	23.30	1.47	6.40	2.02	0	-148	10	
9:10	3.12	250	23.31	1.48	6.40	1.88	0	-147	10	
9:15	3.12	250	23.42	1.49	6.40	1.90	0	-146	10	
9:20	3.12	250	23.48	1.49	6.40	2.02	0	-146	10	

FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])

	23	**1.49**	**6.4**	**2.0**	**0**	**-150**

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER Heron
- [X] PID MiniRAE 3000
- [X] WQ METER Horiba U-52
- [X] TURB. METER Horiba U-52
- [X] PUMP Pine Peri Pump
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	BTEX	8260	No	HCl	25 ml	Yes	Dup, MS/MSD	See COC
X	PAHs	8270	No	None	250 ml	Yes	Dup, MS/MSD	See COC
X	PFAS	537 mod.	No	None	250 ml	Yes	Dup, MS/MSD	See COC

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED — YES [ ] NO [X]

NO-PURGE METHOD UTILIZED — YES [ ] NO [ ]

NUMBER OF GALLONS GENERATED: 2.60

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Lexie Lill Print Name: Lexie Lill

Checked By: Justin King Date: 11/16/2020

LOW FLOW GROUNDWATER SAMPLING RECORD

PROJECT NAME	Cold Spring MGP
PROJECT NUMBER	386554.0000.0000
SAMPLE ID	GW-07
SAMPLE TIME	14:45

LOCATION ID	GW-07
DATE	10/6/2020
START TIME	13:40
END TIME	14:50
SITE NAME/NUMBER	340026
PAGE	1 OF 1

WELL DIAMETER (INCHES) [ ] 1 [X] 2 [ ] 4 [ ] 6 [ ] 8 [ ] OTHER

TUBING ID (INCHES) [ ] 1/8 [X] 1/4 [ ] 3/8 [ ] 1/2 [ ] 5/8 [ ] OTHER

MEASUREMENT POINT (MP) [ ] TOP OF RISER (TOR) [X] TOP OF CASING (TOC) [ ] OTHER

WELL INTEGRITY

	YES	NO	N/A
CAP	X		
CASING	X		
LOCKED		X	
COLLAR	X		

INITIAL DTW (BMP)	3.02 FT	**FINAL DTW (BMP)**	6.74 FT	**PROT. CASING STICKUP (AGS)**	- FT	**TOC/TOR DIFFERENCE**	- FT
WELL DEPTH (BMP)	11.2 FT	**SCREEN LENGTH**	9 FT	**PID AMBIENT AIR**	0.0 PPM	**REFILL TIMER SETTING**	- SEC
WATER COLUMN	8.18 FT	**DRAWDOWN VOLUME** (final DTW - initial DTW X well diam. squared X 0.041)	0.610 GAL	**PID WELL MOUTH**	8.3 PPM	**DISCHARGE TIMER SETTING**	- SEC
CALCULATED GAL/VOL (column X well diameter squared X 0.041)	1.34 GAL	**TOTAL VOL. PURGED** (mL per minute X total minutes X 0.00026 gal/mL)	4.23 GAL	**DRAWDOWN/ TOTAL PURGED**		**PRESSURE TO PUMP**	- PSI

FIELD PARAMETERS WITH PROGRAM STABILIZATION CRITERIA (AS LISTED IN THE QAPP)

TIME 3-5 Minutes	DTW (FT) 0.0-0.33 ft Drawdown	PURGE RATE (mL/min)	TEMP. (°C) (+/- 3 degrees)	SP. CONDUCTANCE (mS/cm) (+/- 3%)	pH (units) (+/- 0.1 units)	DISS. O_2 (mg/L) (+/- 10%)	TURBIDITY (ntu) (+/- 10% <10 ntu)	REDOX (mv) (+/- 10 mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
13:40	**BEGIN PURGING**									
13:55	5.00	250	21.82	0.734	6.87	12.93	19.4	-64	8	
14:00	5.62	250	21.52	0.755	6.91	6.12	13.5	-63	8	
14:05	5.62	250	21.98	0.765	7.02	9.24	21.4	-86	8	
14:10	5.61	250	22.18	0.774	7.07	9.98	30.7	-110	8	
14:15	6.75	250	21.54	0.803	7.02	7.01	54.1	-147	8	
14:20	6.74	250	21.68	0.809	7.00	7.67	52.4	-145	8	
14:25	6.74	250	21.75	0.812	6.99	8.26	50.2	-144	8	
14:30	6.72	250	22.34	0.809	7.08	9.80	39.1	-148	8	
14:35	6.74	250	22.72	0.810	7.13	11.04	26.2	-151	8	
14:40	6.74	250	22.88	0.812	7.16	11.54	16.5	-153	8	
14:45	6.74	250	22.96	0.813	7.17	11.64	16.3	-155	8	
FINAL STABILIZED FIELD PARAMETERS (to appropriate significant figures[SF])										
			23	**0.813**	**7.2**	**11.6**	**16.3**	**-160**		

TEMP.: nearest degree (ex. 10.1 = 10)
COND.: 3 SF max (ex. 3333 = 3330, 0.696 = 0.696)
pH: nearest tenth (ex. 5.53 = 5.5)
DO: nearest tenth (ex. 3.51 = 3.5)
TURB: 3 SF max, nearest tenth (6.19 = 6.2, 101 = 101)
ORP: 2 SF (44.1 = 44, 191 = 190)

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
- [X] PERISTALTIC
- [ ] SUBMERSIBLE
- [ ] BLADDER
- [ ] _____
- [ ] WATTERA
- [ ] OTHER _____
- [ ] OTHER _____

DECON FLUIDS USED
- [ ] LIQUINOX
- [ ] DEIONIZED WATER
- [ ] POTABLE WATER
- [ ] NITRIC ACID
- [ ] HEXANE
- [ ] METHANOL
- [ ] OTHER _____

TUBING/PUMP/BLADDER MATERIALS
- [X] SILICON TUBING
- [ ] TEFLON TUBING
- [ ] TEFLON LINED TUBING
- [X] HDPE TUBING
- [ ] LDPE TUBING
- [ ] OTHER _____
- [ ] OTHER _____

- [ ] S. STEEL PUMP MATERIAL
- [ ] PVC PUMP MATERIAL
- [ ] GEOPROBE SCREEN
- [ ] TEFLON BLADDER
- [ ] OTHER _____
- [ ] OTHER _____
- [ ] OTHER _____

EQUIPMENT USED
- [X] WL METER Heron
- [X] PID MiniRAE 3000
- [X] WQ METER Horiba U-52
- [X] TURB. METER Horiba U-52
- [X] PUMP Pine Peri Pump
- [ ] OTHER _____
- [ ] FILTERS NO. ____ TYPE _____

ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	FIELD FILTERED	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	QC COLLECTED	SAMPLE BOTTLE ID NUMBERS
X	BTEX	8260	No	HCl	25 ml	Yes		See COC
X	PAHs	8270	No	None	250 ml	Yes		See COC
X	PFAS	537 mod.	No	None	250 ml	Yes		See COC

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED — YES [ ] NO [X]

NO-PURGE METHOD UTILIZED — YES [ ] NO [ ]

NUMBER OF GALLONS GENERATED: 4.23

If yes, purged approximately 1 standing volume prior to sampling or _____mL for this sample location.

SKETCH/NOTES

Sampler Signature: Lexie Lill Print Name: Lexie Lill

Checked By: Justin King Date: 11/16/2020

APPENDIX D

LABORATORY ANALYTICAL SUMMARY REPORT
GROUNDWATER, OCTOBER 2020

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-176138-1
Client Project/Site: SMP B - Cold Spring MGP

For:
New York State D.E.C.
625 Broadway
Division of Environmental Remediation
Albany, New York 12233-7014

Attn: Brianna Scharf

Authorized for release by:
10/16/2020 5:08:45 PM

Judy Stone, Senior Project Manager
(484)685-0868
Judy.Stone@Eurofinset.com

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Judy Stone
Senior Project Manager
10/16/2020 5:08:45 PM

Table of Contents

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
I	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 480-176138-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-176138-1

Receipt
The samples were received on 10/8/2020 8:00 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.6º C.

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): GW-06 (480-176138-1), GW-06 MS (480-176138-1[MS]) and GW-06 MSD (480-176138-1[MSD]). Sample 1, 1 MS and 1 MSD plastic 250 mL unpreserved containers (2 per sample) have time 920 but COC lists time as 925. Samples were logged in and labeled according to time on COC.

The following samples have dicoloration: GW-06 (480-176138-1), GW-06 MS (480-176138-1[MS]), GW-06 MSD (480-176138-1[MSD]), GW-05 (480-176138-2), GW-04 (480-176138-4) and DUP (480-176138-6).

GC/MS VOA
Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: GW-06 (480-176138-1), GW-06 MS (480-176138-1[MS]), GW-06 MSD (480-176138-1[MSD]), GW-05 (480-176138-2) and DUP (480-176138-6). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

LCMS
Method 537 (modified): The matrix (MS) recoveries for Perfluorobutanoic acid (PFBA) of preparation batch 320-420118 and analytical batch 320-421022 were outside control limits. Sample matrix interferences are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

Method 537 (modified): The matrix spike duplicate (MSD) precision for Perfluorotridecanoic acid (PFTriA) of preparation batch 320-420118 and analytical batch 320-421022 was outside control limits. Sample matrix interferences are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 537 (modified): The “I” qualifier means the transition mass ratio for the indicated analyte(s) was outside of the established ratio limits. The qualitative identification of the analyte(s) has/have some degree of uncertainty. However, analyst judgement was used to positively identify the analyte(s). GW-06 (480-176138-1), GW-06 MSD (480-176138-1[MSD]) and GW-05 (480-176138-2),

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following sample: GW-05 (480-176138-2). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS in the following samples: GW-04 (480-176138-4) and GW-07 (480-176138-5). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3535: The following samples were yellow prior to extraction: GW-06 (480-176138-1), GW-06 MS (480-176138-1[MS]), GW-06 MSD (480-176138-1[MSD]), GW-05 (480-176138-2), GW-04 (480-176138-4) and DUP (480-176138-6).

Method 3535: The following samples contained a thin layer of sediment at the bottom of the bottle prior to extraction: GW-05

Job ID: 480-176138-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

(480-176138-2), GW-04 (480-176138-4), GW-07 (480-176138-5) and DUP (480-176138-6).

Method 3535: The following samples contained floating particulates in the sample bottle prior to extraction: GW-06 (480-176138-1), GW-06 MS (480-176138-1[MS]) and GW-06 MSD (480-176138-1[MSD]).

Method 3535: The following samples are light yellow after extraction/final volume: GW-06 (480-176138-1), GW-06 MS (480-176138-1[MS]), GW-06 MSD (480-176138-1[MSD]), GW-05 (480-176138-2), GW-04 (480-176138-4), GW-07 (480-176138-5) and DUP (480-176138-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: New York State D.E.C.
Project/Site: SMP B - Cold Spring MGP

Job ID: 480-176138-1

Client Sample ID: GW-06 — Lab Sample ID: 480-176138-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	14		5.0	0.41	ug/L	1		8270D	Total/NA
Anthracene	1.1	J	5.0	0.28	ug/L	1		8270D	Total/NA
Fluoranthene	1.9	J	5.0	0.40	ug/L	1		8270D	Total/NA
Fluorene	0.85	J	5.0	0.36	ug/L	1		8270D	Total/NA
Pyrene	2.6	J	5.0	0.34	ug/L	1		8270D	Total/NA
Perfluoropentanoic acid (PFPeA)	5.3	J	18	4.4	ng/L	10		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	7.8	J	18	2.2	ng/L	10		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	11	J	18	7.6	ng/L	10		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.6	J	18	2.4	ng/L	10		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	11	J	18	1.8	ng/L	10		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.3	J I	18	4.8	ng/L	10		537 (modified)	Total/NA

Client Sample ID: GW-05 — Lab Sample ID: 480-176138-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	4.7	J	5.0	0.41	ug/L	1		8270D	Total/NA
Perfluorobutanoic acid (PFBA)	22		4.5	2.1	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	6.2		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.7		1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.8		1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	7.4		1.8	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.86	J	1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.72	J	1.8	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	4.3		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.2		1.8	0.51	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	5.5	I	1.8	0.48	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-01 — Lab Sample ID: 480-176138-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	6.1		4.4	2.1	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	8.1		1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	7.7		1.7	0.51	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	5.2		1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	13		1.7	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.58	J	1.7	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	6.4		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.1		1.7	0.50	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.24	J	1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.5		1.7	0.47	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-04 — Lab Sample ID: 480-176138-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
o-Xylene	1.2		1.0	0.76	ug/L	1		8260C	Total/NA
Xylenes, Total	1.2	J	2.0	0.66	ug/L	1		8260C	Total/NA
Total BTEX	1.2	J	2.0	1.0	ug/L	1		8260C	Total/NA
Acenaphthene	33		5.0	0.41	ug/L	1		8270D	Total/NA
Anthracene	1.8	J	5.0	0.28	ug/L	1		8270D	Total/NA
Fluoranthene	1.3	J	5.0	0.40	ug/L	1		8270D	Total/NA
Fluorene	6.7		5.0	0.36	ug/L	1		8270D	Total/NA
Phenanthrene	6.1		5.0	0.44	ug/L	1		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample ID: GW-04 (Continued) — Lab Sample ID: 480-176138-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Pyrene	1.4	J	5.0	0.34	ug/L	1		8270D	Total/NA
Perfluorobutanoic acid (PFBA)	8.7		4.6	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	5.7		1.9	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	4.2		1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.8		1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	9.8		1.9	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.69	J	1.9	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	7.6		1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	3.6		1.9	0.53	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.9		1.9	0.50	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-07 — Lab Sample ID: 480-176138-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.94	J	1.0	0.41	ug/L	1		8260C	Total/NA
Ethylbenzene	0.78	J	1.0	0.74	ug/L	1		8260C	Total/NA
Total BTEX	1.7	J	2.0	1.0	ug/L	1		8260C	Total/NA
Acenaphthene	35		5.0	0.41	ug/L	1		8270D	Total/NA
Acenaphthylene	3.8	J	5.0	0.38	ug/L	1		8270D	Total/NA
Anthracene	0.97	J	5.0	0.28	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.48	J	5.0	0.36	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.34	J	5.0	0.34	ug/L	1		8270D	Total/NA
Chrysene	0.33	J	5.0	0.33	ug/L	1		8270D	Total/NA
Fluoranthene	6.1		5.0	0.40	ug/L	1		8270D	Total/NA
Fluorene	14		5.0	0.36	ug/L	1		8270D	Total/NA
Pyrene	3.5	J	5.0	0.34	ug/L	1		8270D	Total/NA
Perfluorobutanoic acid (PFBA)	29		4.5	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	3.0		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.9		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.2		1.8	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.28	J	1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.1		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.7	J	1.8	0.52	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.8	0.49	ng/L	1		537 (modified)	Total/NA

Client Sample ID: DUP — Lab Sample ID: 480-176138-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	11		5.0	0.41	ug/L	1		8270D	Total/NA
Anthracene	0.96	J	5.0	0.28	ug/L	1		8270D	Total/NA
Fluoranthene	1.4	J	5.0	0.40	ug/L	1		8270D	Total/NA
Fluorene	0.92	J	5.0	0.36	ug/L	1		8270D	Total/NA
Phenanthrene	0.50	J	5.0	0.44	ug/L	1		8270D	Total/NA
Pyrene	1.8	J	5.0	0.34	ug/L	1		8270D	Total/NA
Perfluoropentanoic acid (PFPeA)	5.6	J	18	4.3	ng/L	10		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	6.7	J	18	2.2	ng/L	10		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	13	J	18	7.5	ng/L	10		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	14	J	18	1.8	ng/L	10		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8.9	J	18	4.8	ng/L	10		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: New York State D.E.C.
Project/Site: SMP B - Cold Spring MGP

Job ID: 480-176138-1

Client Sample ID: Trip Blank **Lab Sample ID: 480-176138-7**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: New York State D.E.C.
Project/Site: SMP B - Cold Spring MGP

Job ID: 480-176138-1

Client Sample ID: GW-06
Date Collected: 10/06/20 09:25
Date Received: 10/08/20 08:00

Lab Sample ID: 480-176138-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.82	ug/L			10/14/20 17:44	2
Toluene	ND		2.0	1.0	ug/L			10/14/20 17:44	2
Ethylbenzene	ND		2.0	1.5	ug/L			10/14/20 17:44	2
m-Xylene & p-Xylene	ND		4.0	1.3	ug/L			10/14/20 17:44	2
o-Xylene	ND		2.0	1.5	ug/L			10/14/20 17:44	2
Xylenes, Total	ND		4.0	1.3	ug/L			10/14/20 17:44	2
Total BTEX	ND		4.0	2.0	ug/L			10/14/20 17:44	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/14/20 17:44*	*2*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*10/14/20 17:44*	*2*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*10/14/20 17:44*	*2*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*10/14/20 17:44*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**14**		5.0	0.41	ug/L		10/09/20 15:24	10/13/20 20:18	1
Acenaphthylene	ND		5.0	0.38	ug/L		10/09/20 15:24	10/13/20 20:18	1
Anthracene	**1.1**	**J**	5.0	0.28	ug/L		10/09/20 15:24	10/13/20 20:18	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 20:18	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 20:18	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 20:18	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 20:18	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 20:18	1
Chrysene	ND		5.0	0.33	ug/L		10/09/20 15:24	10/13/20 20:18	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 20:18	1
Fluoranthene	**1.9**	**J**	5.0	0.40	ug/L		10/09/20 15:24	10/13/20 20:18	1
Fluorene	**0.85**	**J**	5.0	0.36	ug/L		10/09/20 15:24	10/13/20 20:18	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 20:18	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 20:18	1
Phenanthrene	ND		5.0	0.44	ug/L		10/09/20 15:24	10/13/20 20:18	1
Pyrene	**2.6**	**J**	5.0	0.34	ug/L		10/09/20 15:24	10/13/20 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*95*		*48 - 120*	*10/09/20 15:24*	*10/13/20 20:18*	*1*
Nitrobenzene-d5 (Surr)	*95*		*46 - 120*	*10/09/20 15:24*	*10/13/20 20:18*	*1*
p-Terphenyl-d14 (Surr)	*82*		*60 - 148*	*10/09/20 15:24*	*10/13/20 20:18*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND	F1	45	21	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluoropentanoic acid (PFPeA)	**5.3**	**J**	18	4.4	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorohexanoic acid (PFHxA)	ND		18	5.2	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluoroheptanoic acid (PFHpA)	**7.8**	**J**	18	2.2	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorooctanoic acid (PFOA)	**11**	**J**	18	7.6	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorononanoic acid (PFNA)	**2.6**	**J**	18	2.4	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorodecanoic acid (PFDA)	ND		18	2.8	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluoroundecanoic acid (PFUnA)	ND		18	9.8	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorododecanoic acid (PFDoA)	ND		18	4.9	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorotridecanoic acid (PFTriA)	ND	F2	18	12	ng/L		10/09/20 04:07	10/12/20 15:29	10

Client Sample ID: GW-06

Lab Sample ID: 480-176138-1

Date Collected: 10/06/20 09:25

Matrix: Water

Date Received: 10/08/20 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		18	6.5	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorobutanesulfonic acid (PFBS)	**11**	**J**	18	1.8	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorohexanesulfonic acid (PFHxS)	ND		18	5.1	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		18	1.7	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorooctanesulfonic acid (PFOS)	**8.3**	**J I**	18	4.8	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorodecanesulfonic acid (PFDS)	ND		18	2.8	ng/L		10/09/20 04:07	10/12/20 15:29	10
Perfluorooctanesulfonamide (FOSA)	ND		18	8.7	ng/L		10/09/20 04:07	10/12/20 15:29	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		45	11	ng/L		10/09/20 04:07	10/12/20 15:29	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		45	12	ng/L		10/09/20 04:07	10/12/20 15:29	10
6:2 FTS	ND		45	22	ng/L		10/09/20 04:07	10/12/20 15:29	10
8:2 FTS	ND		18	4.1	ng/L		10/09/20 04:07	10/12/20 15:29	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*68*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C5 PFPeA	*79*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C2 PFHxA	*80*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C4 PFHpA	*85*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C4 PFOA	*102*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C5 PFNA	*91*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C2 PFDA	*85*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C2 PFUnA	*88*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C2 PFDoA	*90*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C2 PFTeDA	*57*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C3 PFBS	*81*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
18O2 PFHxS	*86*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C4 PFOS	*93*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
13C8 FOSA	*79*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
d3-NMeFOSAA	*87*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
d5-NEtFOSAA	*101*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
M2-6:2 FTS	*139*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*
M2-8:2 FTS	*118*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:29*	*10*

Client Sample ID: GW-05

Lab Sample ID: 480-176138-2

Date Collected: 10/06/20 10:40

Matrix: Water

Date Received: 10/08/20 08:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.82	ug/L			10/14/20 18:07	2
Toluene	ND		2.0	1.0	ug/L			10/14/20 18:07	2
Ethylbenzene	ND		2.0	1.5	ug/L			10/14/20 18:07	2
m-Xylene & p-Xylene	ND		4.0	1.3	ug/L			10/14/20 18:07	2
o-Xylene	ND		2.0	1.5	ug/L			10/14/20 18:07	2
Xylenes, Total	ND		4.0	1.3	ug/L			10/14/20 18:07	2
Total BTEX	ND		4.0	2.0	ug/L			10/14/20 18:07	2

Client Sample ID: GW-05
Date Collected: 10/06/20 10:40
Date Received: 10/08/20 08:00

Lab Sample ID: 480-176138-2
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/14/20 18:07*	*2*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*10/14/20 18:07*	*2*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*10/14/20 18:07*	*2*
Dibromofluoromethane (Surr)	*102*		*75 - 123*		*10/14/20 18:07*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.7**	**J**	5.0	0.41	ug/L		10/09/20 15:24	10/13/20 20:47	1
Acenaphthylene	ND		5.0	0.38	ug/L		10/09/20 15:24	10/13/20 20:47	1
Anthracene	ND		5.0	0.28	ug/L		10/09/20 15:24	10/13/20 20:47	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 20:47	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 20:47	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 20:47	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 20:47	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 20:47	1
Chrysene	ND		5.0	0.33	ug/L		10/09/20 15:24	10/13/20 20:47	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 20:47	1
Fluoranthene	ND		5.0	0.40	ug/L		10/09/20 15:24	10/13/20 20:47	1
Fluorene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 20:47	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 20:47	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 20:47	1
Phenanthrene	ND		5.0	0.44	ug/L		10/09/20 15:24	10/13/20 20:47	1
Pyrene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 20:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	*95*		*48 - 120*	*10/09/20 15:24*	*10/13/20 20:47*	*1*
Nitrobenzene-d5 (Surr)	*94*		*46 - 120*	*10/09/20 15:24*	*10/13/20 20:47*	*1*
p-Terphenyl-d14 (Surr)	*75*		*60 - 148*	*10/09/20 15:24*	*10/13/20 20:47*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**22**		4.5	2.1	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluoropentanoic acid (PFPeA)	**6.2**		1.8	0.44	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorohexanoic acid (PFHxA)	**5.7**		1.8	0.52	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluoroheptanoic acid (PFHpA)	**2.8**		1.8	0.22	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorooctanoic acid (PFOA)	**7.4**		1.8	0.76	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorononanoic acid (PFNA)	**0.86**	**J**	1.8	0.24	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorodecanoic acid (PFDA)	**0.72**	**J**	1.8	0.28	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorobutanesulfonic acid (PFBS)	**4.3**		1.8	0.18	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorohexanesulfonic acid (PFHxS)	**3.2**		1.8	0.51	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorooctanesulfonic acid (PFOS)	**5.5**	**I**	1.8	0.48	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		10/09/20 04:07	10/10/20 05:12	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.87	ng/L		10/09/20 04:07	10/10/20 05:12	1

Client Sample ID: GW-05

Lab Sample ID: 480-176138-2

Date Collected: 10/06/20 10:40

Matrix: Water

Date Received: 10/08/20 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		10/09/20 04:07	10/10/20 05:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		10/09/20 04:07	10/10/20 05:12	1
6:2 FTS	ND		4.5	2.2	ng/L		10/09/20 04:07	10/10/20 05:12	1
8:2 FTS	ND		1.8	0.41	ng/L		10/09/20 04:07	10/10/20 05:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*43*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C5 PFPeA	*62*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C2 PFHxA	*75*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C4 PFHpA	*93*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C4 PFOA	*97*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C5 PFNA	*93*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C2 PFDA	*97*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C2 PFUnA	*112*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C2 PFDoA	*108*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C2 PFTeDA	*99*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C3 PFBS	*92*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
18O2 PFHxS	*110*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C4 PFOS	*110*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
13C8 FOSA	*82*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
d3-NMeFOSAA	*88*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
d5-NEtFOSAA	*106*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
M2-6:2 FTS	*265*	**5*	*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*
M2-8:2 FTS	*239*	**5*	*25 - 150*	*10/09/20 04:07*	*10/10/20 05:12*	*1*

Client Sample ID: GW-01

Lab Sample ID: 480-176138-3

Date Collected: 10/06/20 12:20

Matrix: Water

Date Received: 10/08/20 08:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			10/14/20 18:30	1
Toluene	ND		1.0	0.51	ug/L			10/14/20 18:30	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/14/20 18:30	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			10/14/20 18:30	1
o-Xylene	ND		1.0	0.76	ug/L			10/14/20 18:30	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/14/20 18:30	1
Total BTEX	ND		2.0	1.0	ug/L			10/14/20 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*10/14/20 18:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*		*10/14/20 18:30*	*1*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*10/14/20 18:30*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 123*		*10/14/20 18:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.0	0.41	ug/L		10/09/20 15:24	10/13/20 21:17	1
Acenaphthylene	ND		5.0	0.38	ug/L		10/09/20 15:24	10/13/20 21:17	1
Anthracene	ND		5.0	0.28	ug/L		10/09/20 15:24	10/13/20 21:17	1

Client Sample ID: GW-01
Date Collected: 10/06/20 12:20
Date Received: 10/08/20 08:00

Lab Sample ID: 480-176138-3
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 21:17	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 21:17	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 21:17	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 21:17	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 21:17	1
Chrysene	ND		5.0	0.33	ug/L		10/09/20 15:24	10/13/20 21:17	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 21:17	1
Fluoranthene	ND		5.0	0.40	ug/L		10/09/20 15:24	10/13/20 21:17	1
Fluorene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 21:17	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 21:17	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 21:17	1
Phenanthrene	ND		5.0	0.44	ug/L		10/09/20 15:24	10/13/20 21:17	1
Pyrene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*96*		*48 - 120*	*10/09/20 15:24*	*10/13/20 21:17*	*1*
Nitrobenzene-d5 (Surr)	*94*		*46 - 120*	*10/09/20 15:24*	*10/13/20 21:17*	*1*
p-Terphenyl-d14 (Surr)	*97*		*60 - 148*	*10/09/20 15:24*	*10/13/20 21:17*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**6.1**		4.4	2.1	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluoropentanoic acid (PFPeA)	**8.1**		1.7	0.43	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorohexanoic acid (PFHxA)	**7.7**		1.7	0.51	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluoroheptanoic acid (PFHpA)	**5.2**		1.7	0.22	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorooctanoic acid (PFOA)	**13**		1.7	0.74	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorononanoic acid (PFNA)	**0.58**	**J**	1.7	0.24	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorodecanoic acid (PFDA)	ND		1.7	0.27	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.64	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorobutanesulfonic acid (PFBS)	**6.4**		1.7	0.17	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorohexanesulfonic acid (PFHxS)	**6.1**		1.7	0.50	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.24**	**J**	1.7	0.17	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorooctanesulfonic acid (PFOS)	**8.5**		1.7	0.47	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28	ng/L		10/09/20 04:07	10/10/20 05:21	1
Perfluorooctanesulfonamide (FOSA)	ND		1.7	0.86	ng/L		10/09/20 04:07	10/10/20 05:21	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.0	ng/L		10/09/20 04:07	10/10/20 05:21	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1	ng/L		10/09/20 04:07	10/10/20 05:21	1
6:2 FTS	ND		4.4	2.2	ng/L		10/09/20 04:07	10/10/20 05:21	1
8:2 FTS	ND		1.7	0.40	ng/L		10/09/20 04:07	10/10/20 05:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*72*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:21*	*1*
13C5 PFPeA	*86*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:21*	*1*

Client Sample ID: GW-01

Lab Sample ID: 480-176138-3

Date Collected: 10/06/20 12:20

Matrix: Water

Date Received: 10/08/20 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	93		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C4 PFHpA	96		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C4 PFOA	101		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C5 PFNA	104		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C2 PFDA	87		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C2 PFUnA	90		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C2 PFDoA	85		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C2 PFTeDA	91		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C3 PFBS	85		25 - 150	10/09/20 04:07	10/10/20 05:21	1
18O2 PFHxS	89		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C4 PFOS	94		25 - 150	10/09/20 04:07	10/10/20 05:21	1
13C8 FOSA	81		25 - 150	10/09/20 04:07	10/10/20 05:21	1
d3-NMeFOSAA	83		25 - 150	10/09/20 04:07	10/10/20 05:21	1
d5-NEtFOSAA	91		25 - 150	10/09/20 04:07	10/10/20 05:21	1
M2-6:2 FTS	109		25 - 150	10/09/20 04:07	10/10/20 05:21	1
M2-8:2 FTS	101		25 - 150	10/09/20 04:07	10/10/20 05:21	1

Client Sample ID: GW-04

Lab Sample ID: 480-176138-4

Date Collected: 10/06/20 13:25

Matrix: Water

Date Received: 10/08/20 08:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			10/14/20 18:53	1
Toluene	ND		1.0	0.51	ug/L			10/14/20 18:53	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/14/20 18:53	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			10/14/20 18:53	1
o-Xylene	**1.2**		1.0	0.76	ug/L			10/14/20 18:53	1
Xylenes, Total	**1.2**	**J**	2.0	0.66	ug/L			10/14/20 18:53	1
Total BTEX	**1.2**	**J**	2.0	1.0	ug/L			10/14/20 18:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/14/20 18:53	1
1,2-Dichloroethane-d4 (Surr)	113		77 - 120		10/14/20 18:53	1
4-Bromofluorobenzene (Surr)	99		73 - 120		10/14/20 18:53	1
Dibromofluoromethane (Surr)	100		75 - 123		10/14/20 18:53	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**33**		5.0	0.41	ug/L		10/09/20 15:24	10/13/20 21:47	1
Acenaphthylene	ND		5.0	0.38	ug/L		10/09/20 15:24	10/13/20 21:47	1
Anthracene	**1.8**	**J**	5.0	0.28	ug/L		10/09/20 15:24	10/13/20 21:47	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 21:47	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 21:47	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 21:47	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 21:47	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 21:47	1
Chrysene	ND		5.0	0.33	ug/L		10/09/20 15:24	10/13/20 21:47	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 21:47	1
Fluoranthene	**1.3**	**J**	5.0	0.40	ug/L		10/09/20 15:24	10/13/20 21:47	1

Client Sample ID: GW-04
Lab Sample ID: 480-176138-4
Date Collected: 10/06/20 13:25
Matrix: Water
Date Received: 10/08/20 08:00

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**6.7**		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 21:47	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 21:47	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 21:47	1
Phenanthrene	**6.1**		5.0	0.44	ug/L		10/09/20 15:24	10/13/20 21:47	1
Pyrene	**1.4**	**J**	5.0	0.34	ug/L		10/09/20 15:24	10/13/20 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*99*		*48 - 120*	*10/09/20 15:24*	*10/13/20 21:47*	*1*
Nitrobenzene-d5 (Surr)	*97*		*46 - 120*	*10/09/20 15:24*	*10/13/20 21:47*	*1*
p-Terphenyl-d14 (Surr)	*78*		*60 - 148*	*10/09/20 15:24*	*10/13/20 21:47*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**8.7**		4.6	2.2	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluoropentanoic acid (PFPeA)	**5.7**		1.9	0.45	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorohexanoic acid (PFHxA)	**4.2**		1.9	0.54	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluoroheptanoic acid (PFHpA)	**2.8**		1.9	0.23	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorooctanoic acid (PFOA)	**9.8**		1.9	0.79	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorononanoic acid (PFNA)	**0.69**	**J**	1.9	0.25	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.29	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.68	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorobutanesulfonic acid (PFBS)	**7.6**		1.9	0.19	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorohexanesulfonic acid (PFHxS)	**3.6**		1.9	0.53	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorooctanesulfonic acid (PFOS)	**6.9**		1.9	0.50	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30	ng/L		10/09/20 04:07	10/10/20 05:30	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.91	ng/L		10/09/20 04:07	10/10/20 05:30	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1	ng/L		10/09/20 04:07	10/10/20 05:30	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2	ng/L		10/09/20 04:07	10/10/20 05:30	1
6:2 FTS	ND		4.6	2.3	ng/L		10/09/20 04:07	10/10/20 05:30	1
8:2 FTS	ND		1.9	0.43	ng/L		10/09/20 04:07	10/10/20 05:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*55*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C5 PFPeA	*72*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C2 PFHxA	*80*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C4 PFHpA	*95*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C4 PFOA	*90*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C5 PFNA	*102*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C2 PFDA	*88*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C2 PFUnA	*101*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C2 PFDoA	*90*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*
13C2 PFTeDA	*68*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:30*	*1*

Client Sample ID: GW-04
Lab Sample ID: 480-176138-4

Date Collected: 10/06/20 13:25
Matrix: Water
Date Received: 10/08/20 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	81		25 - 150	10/09/20 04:07	10/10/20 05:30	1
18O2 PFHxS	92		25 - 150	10/09/20 04:07	10/10/20 05:30	1
13C4 PFOS	90		25 - 150	10/09/20 04:07	10/10/20 05:30	1
13C8 FOSA	80		25 - 150	10/09/20 04:07	10/10/20 05:30	1
d3-NMeFOSAA	81		25 - 150	10/09/20 04:07	10/10/20 05:30	1
d5-NEtFOSAA	92		25 - 150	10/09/20 04:07	10/10/20 05:30	1
M2-6:2 FTS	165	*5	25 - 150	10/09/20 04:07	10/10/20 05:30	1
M2-8:2 FTS	133		25 - 150	10/09/20 04:07	10/10/20 05:30	1

Client Sample ID: GW-07
Lab Sample ID: 480-176138-5

Date Collected: 10/06/20 14:45
Matrix: Water
Date Received: 10/08/20 08:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.94**	**J**	1.0	0.41	ug/L			10/14/20 19:16	1
Toluene	ND		1.0	0.51	ug/L			10/14/20 19:16	1
Ethylbenzene	**0.78**	**J**	1.0	0.74	ug/L			10/14/20 19:16	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			10/14/20 19:16	1
o-Xylene	ND		1.0	0.76	ug/L			10/14/20 19:16	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/14/20 19:16	1
Total BTEX	**1.7**	**J**	2.0	1.0	ug/L			10/14/20 19:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120		10/14/20 19:16	1
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		10/14/20 19:16	1
4-Bromofluorobenzene (Surr)	99		73 - 120		10/14/20 19:16	1
Dibromofluoromethane (Surr)	98		75 - 123		10/14/20 19:16	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**35**		5.0	0.41	ug/L		10/09/20 15:24	10/13/20 22:17	1
Acenaphthylene	**3.8**	**J**	5.0	0.38	ug/L		10/09/20 15:24	10/13/20 22:17	1
Anthracene	**0.97**	**J**	5.0	0.28	ug/L		10/09/20 15:24	10/13/20 22:17	1
Benzo[a]anthracene	**0.48**	**J**	5.0	0.36	ug/L		10/09/20 15:24	10/13/20 22:17	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 22:17	1
Benzo[b]fluoranthene	**0.34**	**J**	5.0	0.34	ug/L		10/09/20 15:24	10/13/20 22:17	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 22:17	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 22:17	1
Chrysene	**0.33**	**J**	5.0	0.33	ug/L		10/09/20 15:24	10/13/20 22:17	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 22:17	1
Fluoranthene	**6.1**		5.0	0.40	ug/L		10/09/20 15:24	10/13/20 22:17	1
Fluorene	**14**		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 22:17	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 22:17	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 22:17	1
Phenanthrene	ND		5.0	0.44	ug/L		10/09/20 15:24	10/13/20 22:17	1
Pyrene	**3.5**	**J**	5.0	0.34	ug/L		10/09/20 15:24	10/13/20 22:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	97		48 - 120	10/09/20 15:24	10/13/20 22:17	1
Nitrobenzene-d5 (Surr)	95		46 - 120	10/09/20 15:24	10/13/20 22:17	1

Client Sample ID: GW-07

Date Collected: 10/06/20 14:45
Date Received: 10/08/20 08:00

Lab Sample ID: 480-176138-5

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl-d14 (Surr)	*81*		*60 - 148*	*10/09/20 15:24*	*10/13/20 22:17*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**29**		4.5	2.2	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluoropentanoic acid (PFPeA)	**3.0**		1.8	0.44	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorohexanoic acid (PFHxA)	**1.9**		1.8	0.53	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluoroheptanoic acid (PFHpA)	**1.1**	**J**	1.8	0.23	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorooctanoic acid (PFOA)	**2.2**		1.8	0.77	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorononanoic acid (PFNA)	**0.28**	**J**	1.8	0.24	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorobutanesulfonic acid (PFBS)	**2.1**		1.8	0.18	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorohexanesulfonic acid (PFHxS)	**1.7**	**J**	1.8	0.52	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorooctanesulfonic acid (PFOS)	**1.5**	**J**	1.8	0.49	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		10/09/20 04:07	10/10/20 05:39	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.89	ng/L		10/09/20 04:07	10/10/20 05:39	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1	ng/L		10/09/20 04:07	10/10/20 05:39	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2	ng/L		10/09/20 04:07	10/10/20 05:39	1
6:2 FTS	ND		4.5	2.3	ng/L		10/09/20 04:07	10/10/20 05:39	1
8:2 FTS	ND		1.8	0.42	ng/L		10/09/20 04:07	10/10/20 05:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	*68*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C5 PFPeA	*79*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C2 PFHxA	*83*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C4 PFHpA	*91*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C4 PFOA	*100*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C5 PFNA	*107*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C2 PFDA	*83*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C2 PFUnA	*86*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C2 PFDoA	*59*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C2 PFTeDA	*72*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C3 PFBS	*79*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
18O2 PFHxS	*88*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C4 PFOS	*85*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
13C8 FOSA	*79*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
d3-NMeFOSAA	*78*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
d5-NEtFOSAA	*90*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
M2-6:2 FTS	*161*	**5*	*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*
M2-8:2 FTS	*128*		*25 - 150*	*10/09/20 04:07*	*10/10/20 05:39*	*1*

Client Sample ID: DUP

Date Collected: 10/06/20 11:15
Date Received: 10/08/20 08:00

Lab Sample ID: 480-176138-6

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0	0.82	ug/L			10/14/20 19:38	2
Toluene	ND		2.0	1.0	ug/L			10/14/20 19:38	2
Ethylbenzene	ND		2.0	1.5	ug/L			10/14/20 19:38	2
m-Xylene & p-Xylene	ND		4.0	1.3	ug/L			10/14/20 19:38	2
o-Xylene	ND		2.0	1.5	ug/L			10/14/20 19:38	2
Xylenes, Total	ND		4.0	1.3	ug/L			10/14/20 19:38	2
Total BTEX	ND		4.0	2.0	ug/L			10/14/20 19:38	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*80 - 120*		*10/14/20 19:38*	*2*
1,2-Dichloroethane-d4 (Surr)	*104*		*77 - 120*		*10/14/20 19:38*	*2*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*10/14/20 19:38*	*2*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*10/14/20 19:38*	*2*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**11**		5.0	0.41	ug/L		10/09/20 15:24	10/13/20 22:46	1
Acenaphthylene	ND		5.0	0.38	ug/L		10/09/20 15:24	10/13/20 22:46	1
Anthracene	**0.96**	**J**	5.0	0.28	ug/L		10/09/20 15:24	10/13/20 22:46	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 22:46	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 22:46	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 22:46	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 22:46	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 22:46	1
Chrysene	ND		5.0	0.33	ug/L		10/09/20 15:24	10/13/20 22:46	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 22:46	1
Fluoranthene	**1.4**	**J**	5.0	0.40	ug/L		10/09/20 15:24	10/13/20 22:46	1
Fluorene	**0.92**	**J**	5.0	0.36	ug/L		10/09/20 15:24	10/13/20 22:46	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 22:46	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 22:46	1
Phenanthrene	**0.50**	**J**	5.0	0.44	ug/L		10/09/20 15:24	10/13/20 22:46	1
Pyrene	**1.8**	**J**	5.0	0.34	ug/L		10/09/20 15:24	10/13/20 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*98*		*48 - 120*	*10/09/20 15:24*	*10/13/20 22:46*	*1*
Nitrobenzene-d5 (Surr)	*98*		*46 - 120*	*10/09/20 15:24*	*10/13/20 22:46*	*1*
p-Terphenyl-d14 (Surr)	*79*		*60 - 148*	*10/09/20 15:24*	*10/13/20 22:46*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		44	21	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluoropentanoic acid (PFPeA)	**5.6**	**J**	18	4.3	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorohexanoic acid (PFHxA)	ND		18	5.1	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluoroheptanoic acid (PFHpA)	**6.7**	**J**	18	2.2	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorooctanoic acid (PFOA)	**13**	**J**	18	7.5	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorononanoic acid (PFNA)	ND		18	2.4	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorodecanoic acid (PFDA)	ND		18	2.7	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluoroundecanoic acid (PFUnA)	ND		18	9.7	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorododecanoic acid (PFDoA)	ND		18	4.9	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorotridecanoic acid (PFTriA)	ND		18	12	ng/L		10/09/20 04:07	10/12/20 15:56	10

Client Sample ID: DUP

Lab Sample ID: 480-176138-6

Date Collected: 10/06/20 11:15

Matrix: Water

Date Received: 10/08/20 08:00

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorotetradecanoic acid (PFTeA)	ND		18	6.5	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorobutanesulfonic acid (PFBS)	**14**	**J**	18	1.8	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorohexanesulfonic acid (PFHxS)	ND		18	5.0	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluoroheptanesulfonic Acid (PFHpS)	ND		18	1.7	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorooctanesulfonic acid (PFOS)	**8.9**	**J**	18	4.8	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorodecanesulfonic acid (PFDS)	ND		18	2.8	ng/L		10/09/20 04:07	10/12/20 15:56	10
Perfluorooctanesulfonamide (FOSA)	ND		18	8.7	ng/L		10/09/20 04:07	10/12/20 15:56	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		44	11	ng/L		10/09/20 04:07	10/12/20 15:56	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		44	12	ng/L		10/09/20 04:07	10/12/20 15:56	10
6:2 FTS	ND		44	22	ng/L		10/09/20 04:07	10/12/20 15:56	10
8:2 FTS	ND		18	4.1	ng/L		10/09/20 04:07	10/12/20 15:56	10

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*64*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C5 PFPeA	*76*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C2 PFHxA	*78*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C4 PFHpA	*90*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C4 PFOA	*89*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C5 PFNA	*97*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C2 PFDA	*84*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C2 PFUnA	*88*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C2 PFDoA	*84*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C2 PFTeDA	*57*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C3 PFBS	*79*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
18O2 PFHxS	*86*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C4 PFOS	*87*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
13C8 FOSA	*77*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
d3-NMeFOSAA	*86*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
d5-NEtFOSAA	*95*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
M2-6:2 FTS	*141*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*
M2-8:2 FTS	*115*		*25 - 150*	*10/09/20 04:07*	*10/12/20 15:56*	*10*

Client Sample ID: Trip Blank

Lab Sample ID: 480-176138-7

Date Collected: 10/06/20 00:00

Matrix: Water

Date Received: 10/08/20 08:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			10/14/20 20:01	1
Toluene	ND		1.0	0.51	ug/L			10/14/20 20:01	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/14/20 20:01	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			10/14/20 20:01	1
o-Xylene	ND		1.0	0.76	ug/L			10/14/20 20:01	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/14/20 20:01	1
Total BTEX	ND		2.0	1.0	ug/L			10/14/20 20:01	1

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Client Sample ID: Trip Blank
Lab Sample ID: 480-176138-7
Date Collected: 10/06/20 00:00
Matrix: Water
Date Received: 10/08/20 08:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		10/14/20 20:01	1
1,2-Dichloroethane-d4 (Surr)	101		77 - 120		10/14/20 20:01	1
4-Bromofluorobenzene (Surr)	99		73 - 120		10/14/20 20:01	1
Dibromofluoromethane (Surr)	98		75 - 123		10/14/20 20:01	1

Surrogate Summary

Client: New York State D.E.C.
Project/Site: SMP B - Cold Spring MGP

Job ID: 480-176138-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DCA	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(77-120)	(73-120)	(75-123)
480-176138-1	GW-06	102	97	99	99
480-176138-1 MS	GW-06 MS	97	99	97	97
480-176138-1 MSD	GW-06 MSD	99	97	99	105
480-176138-2	GW-05	101	97	102	102
480-176138-3	GW-01	101	97	99	100
480-176138-4	GW-04	101	113	99	100
480-176138-5	GW-07	99	101	99	98
480-176138-6	DUP	103	104	104	101
480-176138-7	Trip Blank	100	101	99	98
LCS 480-553834/5	Lab Control Sample	99	100	100	101
MB 480-553834/7	Method Blank	105	95	100	98

Surrogate Legend

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(48-120)	(46-120)	(60-148)
480-176138-1	GW-06	95	95	82
480-176138-1 MS	GW-06 MS	96	93	69
480-176138-1 MSD	GW-06 MSD	95	92	73
480-176138-2	GW-05	95	94	75
480-176138-3	GW-01	96	94	97
480-176138-4	GW-04	99	97	78
480-176138-5	GW-07	97	95	81
480-176138-6	DUP	98	98	79
LCS 480-553306/2-A	Lab Control Sample	93	89	104
MB 480-553306/1-A	Method Blank	95	95	108

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: SMP B - Cold Spring MGP

Job ID: 480-176138-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
480-176138-1	GW-06	68	79	80	85	102	91	85	88
480-176138-1 MS	GW-06 MS	63	76	78	82	98	96	88	89
480-176138-1 MSD	GW-06 MSD	67	78	82	90	94	101	88	81
480-176138-2	GW-05	43	62	75	93	97	93	97	112
480-176138-3	GW-01	72	86	93	96	101	104	87	90
480-176138-4	GW-04	55	72	80	95	90	102	88	101
480-176138-5	GW-07	68	79	83	91	100	107	83	86
480-176138-6	DUP	64	76	78	90	89	97	84	88
LCS 320-420118/2-A	Lab Control Sample	84	90	87	91	94	85	79	82
MB 320-420118/1-A	Method Blank	85	88	89	88	104	99	84	99

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
480-176138-1	GW-06	90	57	81	86	93	79	87	101
480-176138-1 MS	GW-06 MS	82	57	78	82	86	74	87	90
480-176138-1 MSD	GW-06 MSD	76	61	80	86	91	76	91	97
480-176138-2	GW-05	108	99	92	110	110	82	88	106
480-176138-3	GW-01	85	91	85	89	94	81	83	91
480-176138-4	GW-04	90	68	81	92	90	80	81	92
480-176138-5	GW-07	59	72	79	88	85	79	78	90
480-176138-6	DUP	84	57	79	86	87	77	86	95
LCS 320-420118/2-A	Lab Control Sample	96	99	86	87	88	81	95	95
MB 320-420118/1-A	Method Blank	91	90	85	91	91	77	88	96

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-176138-1	GW-06	139	118
480-176138-1 MS	GW-06 MS	127	120
480-176138-1 MSD	GW-06 MSD	138	127
480-176138-2	GW-05	265 *5	239 *5
480-176138-3	GW-01	109	101
480-176138-4	GW-04	165 *5	133
480-176138-5	GW-07	161 *5	128
480-176138-6	DUP	141	115
LCS 320-420118/2-A	Lab Control Sample	100	97
MB 320-420118/1-A	Method Blank	104	103

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS

Isotope Dilution Summary

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-553834/7
Matrix: Water
Analysis Batch: 553834

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			10/14/20 12:45	1
Toluene	ND		1.0	0.51	ug/L			10/14/20 12:45	1
Ethylbenzene	ND		1.0	0.74	ug/L			10/14/20 12:45	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			10/14/20 12:45	1
o-Xylene	ND		1.0	0.76	ug/L			10/14/20 12:45	1
Xylenes, Total	ND		2.0	0.66	ug/L			10/14/20 12:45	1
Total BTEX	ND		2.0	1.0	ug/L			10/14/20 12:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*80 - 120*		*10/14/20 12:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*77 - 120*		*10/14/20 12:45*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*10/14/20 12:45*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 123*		*10/14/20 12:45*	*1*

Lab Sample ID: LCS 480-553834/5
Matrix: Water
Analysis Batch: 553834

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	23.3		ug/L		93	71 - 124
Toluene	25.0	23.5		ug/L		94	80 - 122
Ethylbenzene	25.0	23.4		ug/L		94	77 - 123
m-Xylene & p-Xylene	25.0	22.5		ug/L		90	76 - 122
o-Xylene	25.0	23.8		ug/L		95	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*
Dibromofluoromethane (Surr)	*101*		*75 - 123*

Lab Sample ID: 480-176138-1 MS
Matrix: Water
Analysis Batch: 553834

Client Sample ID: GW-06 MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		50.0	49.1		ug/L		98	71 - 124
Toluene	ND		50.0	49.2		ug/L		98	80 - 122
Ethylbenzene	ND		50.0	50.2		ug/L		100	77 - 123
m-Xylene & p-Xylene	ND		50.0	48.1		ug/L		96	76 - 122
o-Xylene	ND		50.0	49.1		ug/L		98	76 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*
4-Bromofluorobenzene (Surr)	*97*		*73 - 120*
Dibromofluoromethane (Surr)	*97*		*75 - 123*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-176138-1 MSD
Matrix: Water
Analysis Batch: 553834

Client Sample ID: GW-06 MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		50.0	49.2		ug/L		98	71 - 124	0	13
Toluene	ND		50.0	47.8		ug/L		96	80 - 122	3	15
Ethylbenzene	ND		50.0	49.6		ug/L		99	77 - 123	1	15
m-Xylene & p-Xylene	ND		50.0	48.4		ug/L		97	76 - 122	1	16
o-Xylene	ND		50.0	50.3		ug/L		101	76 - 122	2	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*
Dibromofluoromethane (Surr)	*105*		*75 - 123*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-553306/1-A
Matrix: Water
Analysis Batch: 553672

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 553306

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.0	0.41	ug/L		10/09/20 15:24	10/13/20 18:18	1
Acenaphthylene	ND		5.0	0.38	ug/L		10/09/20 15:24	10/13/20 18:18	1
Anthracene	ND		5.0	0.28	ug/L		10/09/20 15:24	10/13/20 18:18	1
Benzo[a]anthracene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 18:18	1
Benzo[a]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 18:18	1
Benzo[b]fluoranthene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 18:18	1
Benzo[g,h,i]perylene	ND		5.0	0.35	ug/L		10/09/20 15:24	10/13/20 18:18	1
Benzo[k]fluoranthene	ND		5.0	0.73	ug/L		10/09/20 15:24	10/13/20 18:18	1
Chrysene	ND		5.0	0.33	ug/L		10/09/20 15:24	10/13/20 18:18	1
Dibenz(a,h)anthracene	ND		5.0	0.42	ug/L		10/09/20 15:24	10/13/20 18:18	1
Fluoranthene	ND		5.0	0.40	ug/L		10/09/20 15:24	10/13/20 18:18	1
Fluorene	ND		5.0	0.36	ug/L		10/09/20 15:24	10/13/20 18:18	1
Indeno[1,2,3-cd]pyrene	ND		5.0	0.47	ug/L		10/09/20 15:24	10/13/20 18:18	1
Naphthalene	ND		5.0	0.76	ug/L		10/09/20 15:24	10/13/20 18:18	1
Phenanthrene	ND		5.0	0.44	ug/L		10/09/20 15:24	10/13/20 18:18	1
Pyrene	ND		5.0	0.34	ug/L		10/09/20 15:24	10/13/20 18:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*95*		*48 - 120*	*10/09/20 15:24*	*10/13/20 18:18*	*1*
Nitrobenzene-d5 (Surr)	*95*		*46 - 120*	*10/09/20 15:24*	*10/13/20 18:18*	*1*
p-Terphenyl-d14 (Surr)	*108*		*60 - 148*	*10/09/20 15:24*	*10/13/20 18:18*	*1*

Lab Sample ID: LCS 480-553306/2-A
Matrix: Water
Analysis Batch: 553672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 553306

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acenaphthene			32.0	28.0		ug/L		87	60 - 120		
Acenaphthylene			32.0	29.5		ug/L		92	63 - 120		

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-553306/2-A
Matrix: Water
Analysis Batch: 553672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 553306

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Anthracene	32.0	29.6		ug/L		92	67 - 120
Benzo[a]anthracene	32.0	30.8		ug/L		96	70 - 121
Benzo[a]pyrene	32.0	31.5		ug/L		99	60 - 123
Benzo[b]fluoranthene	32.0	32.7		ug/L		102	66 - 126
Benzo[g,h,i]perylene	32.0	32.6		ug/L		102	66 - 150
Benzo[k]fluoranthene	32.0	33.4		ug/L		104	65 - 124
Chrysene	32.0	30.6		ug/L		96	69 - 120
Dibenz(a,h)anthracene	32.0	33.3		ug/L		104	65 - 135
Fluoranthene	32.0	32.2		ug/L		101	69 - 126
Fluorene	32.0	28.8		ug/L		90	66 - 120
Indeno[1,2,3-cd]pyrene	32.0	32.6		ug/L		102	69 - 146
Naphthalene	32.0	27.4		ug/L		86	57 - 120
Phenanthrene	32.0	30.4		ug/L		95	68 - 120
Pyrene	32.0	32.0		ug/L		100	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*93*		*48 - 120*
Nitrobenzene-d5 (Surr)	*89*		*46 - 120*
p-Terphenyl-d14 (Surr)	*104*		*60 - 148*

Lab Sample ID: 480-176138-1 MS
Matrix: Water
Analysis Batch: 553672

Client Sample ID: GW-06 MS
Prep Type: Total/NA
Prep Batch: 553306

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	14		32.0	41.7		ug/L		87	48 - 120
Acenaphthylene	ND		32.0	30.5		ug/L		95	63 - 120
Anthracene	1.1	J	32.0	30.2		ug/L		91	65 - 122
Benzo[a]anthracene	ND		32.0	27.1		ug/L		85	43 - 124
Benzo[a]pyrene	ND		32.0	25.3		ug/L		79	23 - 125
Benzo[b]fluoranthene	ND		32.0	25.0		ug/L		78	27 - 127
Benzo[g,h,i]perylene	ND		32.0	25.4		ug/L		79	16 - 147
Benzo[k]fluoranthene	ND		32.0	25.2		ug/L		79	20 - 124
Chrysene	ND		32.0	26.1		ug/L		81	44 - 122
Dibenz(a,h)anthracene	ND		32.0	25.4		ug/L		79	16 - 139
Fluoranthene	1.9	J	32.0	32.0		ug/L		94	63 - 129
Fluorene	0.85	J	32.0	30.9		ug/L		94	62 - 120
Indeno[1,2,3-cd]pyrene	ND		32.0	25.4		ug/L		79	16 - 140
Naphthalene	ND		32.0	28.6		ug/L		89	45 - 120
Phenanthrene	ND		32.0	30.8		ug/L		96	65 - 122
Pyrene	2.6	J	32.0	31.4		ug/L		90	58 - 128

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl	*96*		*48 - 120*
Nitrobenzene-d5 (Surr)	*93*		*46 - 120*
p-Terphenyl-d14 (Surr)	*69*		*60 - 148*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 480-176138-1 MSD
Matrix: Water
Analysis Batch: 553672

Client Sample ID: GW-06 MSD
Prep Type: Total/NA
Prep Batch: 553306

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	14		32.0	41.1		ug/L		85	48 - 120	2	24
Acenaphthylene	ND		32.0	31.6		ug/L		99	63 - 120	4	18
Anthracene	1.1	J	32.0	31.3		ug/L		94	65 - 122	4	15
Benzo[a]anthracene	ND		32.0	28.2		ug/L		88	43 - 124	4	15
Benzo[a]pyrene	ND		32.0	25.8		ug/L		81	23 - 125	2	15
Benzo[b]fluoranthene	ND		32.0	25.7		ug/L		80	27 - 127	3	15
Benzo[g,h,i]perylene	ND		32.0	26.3		ug/L		82	16 - 147	3	15
Benzo[k]fluoranthene	ND		32.0	25.6		ug/L		80	20 - 124	2	22
Chrysene	ND		32.0	27.6		ug/L		86	44 - 122	6	15
Dibenz(a,h)anthracene	ND		32.0	26.4		ug/L		82	16 - 139	4	15
Fluoranthene	1.9	J	32.0	32.9		ug/L		97	63 - 129	3	15
Fluorene	0.85	J	32.0	31.2		ug/L		95	62 - 120	1	15
Indeno[1,2,3-cd]pyrene	ND		32.0	25.7		ug/L		80	16 - 140	1	15
Naphthalene	ND		32.0	28.5		ug/L		89	45 - 120	0	29
Phenanthrene	ND		32.0	31.2		ug/L		97	65 - 122	1	15
Pyrene	2.6	J	32.0	32.9		ug/L		94	58 - 128	5	19

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl	*95*		*48 - 120*
Nitrobenzene-d5 (Surr)	*92*		*46 - 120*
p-Terphenyl-d14 (Surr)	*73*		*60 - 148*

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-420118/1-A
Matrix: Water
Analysis Batch: 420740

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		5.0	2.4	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.73	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.57	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		10/09/20 04:07	10/10/20 04:26	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.98	ng/L		10/09/20 04:07	10/10/20 04:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		5.0	1.2	ng/L		10/09/20 04:07	10/10/20 04:26	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-420118/1-A
Matrix: Water
Analysis Batch: 420740

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 420118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		5.0	1.3	ng/L		10/09/20 04:07	10/10/20 04:26	1
6:2 FTS	ND		5.0	2.5	ng/L		10/09/20 04:07	10/10/20 04:26	1
8:2 FTS	ND		2.0	0.46	ng/L		10/09/20 04:07	10/10/20 04:26	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*85*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C5 PFPeA	*88*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C2 PFHxA	*89*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C4 PFHpA	*88*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C4 PFOA	*104*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C5 PFNA	*99*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C2 PFDA	*84*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C2 PFUnA	*99*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C2 PFDoA	*91*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C2 PFTeDA	*90*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C3 PFBS	*85*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
18O2 PFHxS	*91*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C4 PFOS	*91*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
13C8 FOSA	*77*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
d3-NMeFOSAA	*88*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
d5-NEtFOSAA	*96*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
M2-6:2 FTS	*104*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*
M2-8:2 FTS	*103*		*25 - 150*	*10/09/20 04:07*	*10/10/20 04:26*	*1*

Lab Sample ID: LCS 320-420118/2-A
Matrix: Water
Analysis Batch: 420740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	44.2		ng/L		111	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	38.5		ng/L		96	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	42.5		ng/L		106	73 - 133
Perfluoroheptanoic acid (PFHpA)	40.0	45.4		ng/L		114	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	40.2		ng/L		100	70 - 130
Perfluorononanoic acid (PFNA)	40.0	50.5		ng/L		126	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	44.6		ng/L		112	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	47.6		ng/L		119	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	41.5		ng/L		104	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	43.8		ng/L		110	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	34.3		ng/L		86	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	37.3		ng/L		105	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.3		ng/L		100	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.7		ng/L		107	76 - 136

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-420118/2-A
Matrix: Water
Analysis Batch: 420740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 420118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	37.1	39.9		ng/L		107	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	42.2		ng/L		109	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	45.4		ng/L		114	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.2		ng/L		106	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	42.3		ng/L		106	76 - 136
6:2 FTS	37.9	38.5		ng/L		102	59 - 175
8:2 FTS	38.3	41.6		ng/L		109	75 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*84*		*25 - 150*
13C5 PFPeA	*90*		*25 - 150*
13C2 PFHxA	*87*		*25 - 150*
13C4 PFHpA	*91*		*25 - 150*
13C4 PFOA	*94*		*25 - 150*
13C5 PFNA	*85*		*25 - 150*
13C2 PFDA	*79*		*25 - 150*
13C2 PFUnA	*82*		*25 - 150*
13C2 PFDoA	*96*		*25 - 150*
13C2 PFTeDA	*99*		*25 - 150*
13C3 PFBS	*86*		*25 - 150*
18O2 PFHxS	*87*		*25 - 150*
13C4 PFOS	*88*		*25 - 150*
13C8 FOSA	*81*		*25 - 150*
d3-NMeFOSAA	*95*		*25 - 150*
d5-NEtFOSAA	*95*		*25 - 150*
M2-6:2 FTS	*100*		*25 - 150*
M2-8:2 FTS	*97*		*25 - 150*

Lab Sample ID: 480-176138-1 MS
Matrix: Water
Analysis Batch: 421022

Client Sample ID: GW-06 MS
Prep Type: Total/NA
Prep Batch: 420118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	ND	F1	35.3	49.8	F1	ng/L		141	76 - 136
Perfluoropentanoic acid (PFPeA)	5.3	J	35.3	37.4		ng/L		91	71 - 131
Perfluorohexanoic acid (PFHxA)	ND		35.3	40.3		ng/L		114	73 - 133
Perfluoroheptanoic acid (PFHpA)	7.8	J	35.3	42.0		ng/L		97	72 - 132
Perfluorooctanoic acid (PFOA)	11	J	35.3	44.4		ng/L		94	70 - 130
Perfluorononanoic acid (PFNA)	2.6	J	35.3	37.6		ng/L		99	75 - 135
Perfluorodecanoic acid (PFDA)	ND		35.3	40.3		ng/L		114	76 - 136
Perfluoroundecanoic acid (PFUnA)	ND		35.3	34.6		ng/L		98	68 - 128
Perfluorododecanoic acid (PFDoA)	ND		35.3	35.4		ng/L		100	71 - 131
Perfluorotridecanoic acid (PFTriA)	ND	F2	35.3	26.5		ng/L		75	71 - 131

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-176138-1 MS
Matrix: Water
Analysis Batch: 421022

Client Sample ID: GW-06 MS
Prep Type: Total/NA
Prep Batch: 420118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorotetradecanoic acid (PFTeA)	ND		35.3	37.1		ng/L		105	70 - 130
Perfluorobutanesulfonic acid (PFBS)	11	J	31.2	44.0		ng/L		107	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	ND		32.1	33.7		ng/L		105	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	ND		33.6	34.7		ng/L		103	76 - 136
Perfluorooctanesulfonic acid (PFOS)	8.3	J I	32.8	43.2		ng/L		107	70 - 130
Perfluorodecanesulfonic acid (PFDS)	ND		34.0	29.8		ng/L		87	71 - 131
Perfluorooctanesulfonamide (FOSA)	ND		35.3	39.4		ng/L		112	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		35.3	37.2	J	ng/L		105	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		35.3	33.0	J	ng/L		93	76 - 136
6:2 FTS	ND		33.5	45.6		ng/L		136	59 - 175
8:2 FTS	ND		33.8	35.9		ng/L		106	75 - 135

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
13C4 PFBA	*63*		*25 - 150*
13C5 PFPeA	*76*		*25 - 150*
13C2 PFHxA	*78*		*25 - 150*
13C4 PFHpA	*82*		*25 - 150*
13C4 PFOA	*98*		*25 - 150*
13C5 PFNA	*96*		*25 - 150*
13C2 PFDA	*88*		*25 - 150*
13C2 PFUnA	*89*		*25 - 150*
13C2 PFDoA	*82*		*25 - 150*
13C2 PFTeDA	*57*		*25 - 150*
13C3 PFBS	*78*		*25 - 150*
18O2 PFHxS	*82*		*25 - 150*
13C4 PFOS	*86*		*25 - 150*
13C8 FOSA	*74*		*25 - 150*
d3-NMeFOSAA	*87*		*25 - 150*
d5-NEtFOSAA	*90*		*25 - 150*
M2-6:2 FTS	*127*		*25 - 150*
M2-8:2 FTS	*120*		*25 - 150*

Lab Sample ID: 480-176138-1 MSD
Matrix: Water
Analysis Batch: 421022

Client Sample ID: GW-06 MSD
Prep Type: Total/NA
Prep Batch: 420118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	ND	F1	36.2	49.0		ng/L		135	76 - 136	2	30
Perfluoropentanoic acid (PFPeA)	5.3	J	36.2	38.1		ng/L		90	71 - 131	2	30
Perfluorohexanoic acid (PFHxA)	ND		36.2	39.7		ng/L		110	73 - 133	2	30
Perfluoroheptanoic acid (PFHpA)	7.8	J	36.2	44.0		ng/L		100	72 - 132	4	30
Perfluorooctanoic acid (PFOA)	11	J	36.2	50.3		ng/L		108	70 - 130	12	30

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: 480-176138-1 MSD
Matrix: Water
Analysis Batch: 421022

Client Sample ID: GW-06 MSD
Prep Type: Total/NA
Prep Batch: 420118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorononanoic acid (PFNA)	2.6	J	36.2	35.5		ng/L		91	75 - 135	6	30
Perfluorodecanoic acid (PFDA)	ND		36.2	35.0		ng/L		97	76 - 136	14	30
Perfluoroundecanoic acid (PFUnA)	ND		36.2	37.3		ng/L		103	68 - 128	7	30
Perfluorododecanoic acid (PFDoA)	ND		36.2	37.1		ng/L		103	71 - 131	5	30
Perfluorotridecanoic acid (PFTriA)	ND	F2	36.2	37.1	I F2	ng/L		102	71 - 131	33	30
Perfluorotetradecanoic acid (PFTeA)	ND		36.2	34.9		ng/L		97	70 - 130	6	30
Perfluorobutanesulfonic acid (PFBS)	11	J	32.0	46.4		ng/L		112	67 - 127	5	30
Perfluorohexanesulfonic acid (PFHxS)	ND		32.9	35.3		ng/L		107	59 - 119	5	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND		34.5	35.5		ng/L		103	76 - 136	2	30
Perfluorooctanesulfonic acid (PFOS)	8.3	J I	33.6	41.2		ng/L		98	70 - 130	5	30
Perfluorodecanesulfonic acid (PFDS)	ND		34.9	30.4		ng/L		87	71 - 131	2	30
Perfluorooctanesulfonamide (FOSA)	ND		36.2	38.4		ng/L		106	73 - 133	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		36.2	36.0	J	ng/L		99	76 - 136	3	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		36.2	33.5	J	ng/L		93	76 - 136	2	30
6:2 FTS	ND		34.3	41.3	J	ng/L		120	59 - 175	10	30
8:2 FTS	ND		34.7	34.4		ng/L		99	75 - 135	4	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
13C4 PFBA	*67*		*25 - 150*
13C5 PFPeA	*78*		*25 - 150*
13C2 PFHxA	*82*		*25 - 150*
13C4 PFHpA	*90*		*25 - 150*
13C4 PFOA	*94*		*25 - 150*
13C5 PFNA	*101*		*25 - 150*
13C2 PFDA	*88*		*25 - 150*
13C2 PFUnA	*81*		*25 - 150*
13C2 PFDoA	*76*		*25 - 150*
13C2 PFTeDA	*61*		*25 - 150*
13C3 PFBS	*80*		*25 - 150*
18O2 PFHxS	*86*		*25 - 150*
13C4 PFOS	*91*		*25 - 150*
13C8 FOSA	*76*		*25 - 150*
d3-NMeFOSAA	*91*		*25 - 150*
d5-NEtFOSAA	*97*		*25 - 150*
M2-6:2 FTS	*138*		*25 - 150*
M2-8:2 FTS	*127*		*25 - 150*

GC/MS VOA

Analysis Batch: 553834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-1	GW-06	Total/NA	Water	8260C	
480-176138-2	GW-05	Total/NA	Water	8260C	
480-176138-3	GW-01	Total/NA	Water	8260C	
480-176138-4	GW-04	Total/NA	Water	8260C	
480-176138-5	GW-07	Total/NA	Water	8260C	
480-176138-6	DUP	Total/NA	Water	8260C	
480-176138-7	Trip Blank	Total/NA	Water	8260C	
MB 480-553834/7	Method Blank	Total/NA	Water	8260C	
LCS 480-553834/5	Lab Control Sample	Total/NA	Water	8260C	
480-176138-1 MS	GW-06 MS	Total/NA	Water	8260C	
480-176138-1 MSD	GW-06 MSD	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 553306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-1	GW-06	Total/NA	Water	3510C	
480-176138-2	GW-05	Total/NA	Water	3510C	
480-176138-3	GW-01	Total/NA	Water	3510C	
480-176138-4	GW-04	Total/NA	Water	3510C	
480-176138-5	GW-07	Total/NA	Water	3510C	
480-176138-6	DUP	Total/NA	Water	3510C	
MB 480-553306/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-553306/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-176138-1 MS	GW-06 MS	Total/NA	Water	3510C	
480-176138-1 MSD	GW-06 MSD	Total/NA	Water	3510C	

Analysis Batch: 553672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-1	GW-06	Total/NA	Water	8270D	553306
480-176138-2	GW-05	Total/NA	Water	8270D	553306
480-176138-3	GW-01	Total/NA	Water	8270D	553306
480-176138-4	GW-04	Total/NA	Water	8270D	553306
480-176138-5	GW-07	Total/NA	Water	8270D	553306
480-176138-6	DUP	Total/NA	Water	8270D	553306
MB 480-553306/1-A	Method Blank	Total/NA	Water	8270D	553306
LCS 480-553306/2-A	Lab Control Sample	Total/NA	Water	8270D	553306
480-176138-1 MS	GW-06 MS	Total/NA	Water	8270D	553306
480-176138-1 MSD	GW-06 MSD	Total/NA	Water	8270D	553306

LCMS

Prep Batch: 420118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-1	GW-06	Total/NA	Water	3535	
480-176138-2	GW-05	Total/NA	Water	3535	
480-176138-3	GW-01	Total/NA	Water	3535	
480-176138-4	GW-04	Total/NA	Water	3535	
480-176138-5	GW-07	Total/NA	Water	3535	
480-176138-6	DUP	Total/NA	Water	3535	
MB 320-420118/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-420118/2-A	Lab Control Sample	Total/NA	Water	3535	

LCMS (Continued)

Prep Batch: 420118 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-1 MS	GW-06 MS	Total/NA	Water	3535	
480-176138-1 MSD	GW-06 MSD	Total/NA	Water	3535	

Analysis Batch: 420740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-2	GW-05	Total/NA	Water	537 (modified)	420118
480-176138-3	GW-01	Total/NA	Water	537 (modified)	420118
480-176138-4	GW-04	Total/NA	Water	537 (modified)	420118
480-176138-5	GW-07	Total/NA	Water	537 (modified)	420118
MB 320-420118/1-A	Method Blank	Total/NA	Water	537 (modified)	420118
LCS 320-420118/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	420118

Analysis Batch: 421022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-176138-1	GW-06	Total/NA	Water	537 (modified)	420118
480-176138-6	DUP	Total/NA	Water	537 (modified)	420118
480-176138-1 MS	GW-06 MS	Total/NA	Water	537 (modified)	420118
480-176138-1 MSD	GW-06 MSD	Total/NA	Water	537 (modified)	420118

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Client Sample ID: GW-06
Lab Sample ID: 480-176138-1
Date Collected: 10/06/20 09:25
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	553834	10/14/20 17:44	AMM	TAL BUF
Total/NA	Prep	3510C			553306	10/09/20 15:24	ATG	TAL BUF
Total/NA	Analysis	8270D		1	553672	10/13/20 20:18	JMM	TAL BUF
Total/NA	Prep	3535			420118	10/09/20 04:07	EG	TAL SAC
Total/NA	Analysis	537 (modified)		10	421022	10/12/20 15:29	K1S	TAL SAC

Client Sample ID: GW-05
Lab Sample ID: 480-176138-2
Date Collected: 10/06/20 10:40
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	553834	10/14/20 18:07	AMM	TAL BUF
Total/NA	Prep	3510C			553306	10/09/20 15:24	ATG	TAL BUF
Total/NA	Analysis	8270D		1	553672	10/13/20 20:47	JMM	TAL BUF
Total/NA	Prep	3535			420118	10/09/20 04:07	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	420740	10/10/20 05:12	D1R	TAL SAC

Client Sample ID: GW-01
Lab Sample ID: 480-176138-3
Date Collected: 10/06/20 12:20
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	553834	10/14/20 18:30	AMM	TAL BUF
Total/NA	Prep	3510C			553306	10/09/20 15:24	ATG	TAL BUF
Total/NA	Analysis	8270D		1	553672	10/13/20 21:17	JMM	TAL BUF
Total/NA	Prep	3535			420118	10/09/20 04:07	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	420740	10/10/20 05:21	D1R	TAL SAC

Client Sample ID: GW-04
Lab Sample ID: 480-176138-4
Date Collected: 10/06/20 13:25
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	553834	10/14/20 18:53	AMM	TAL BUF
Total/NA	Prep	3510C			553306	10/09/20 15:24	ATG	TAL BUF
Total/NA	Analysis	8270D		1	553672	10/13/20 21:47	JMM	TAL BUF
Total/NA	Prep	3535			420118	10/09/20 04:07	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	420740	10/10/20 05:30	D1R	TAL SAC

Client Sample ID: GW-07
Lab Sample ID: 480-176138-5
Date Collected: 10/06/20 14:45
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	553834	10/14/20 19:16	AMM	TAL BUF

Lab Chronicle

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Client Sample ID: GW-07
Lab Sample ID: 480-176138-5
Date Collected: 10/06/20 14:45
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			553306	10/09/20 15:24	ATG	TAL BUF
Total/NA	Analysis	8270D		1	553672	10/13/20 22:17	JMM	TAL BUF
Total/NA	Prep	3535			420118	10/09/20 04:07	EG	TAL SAC
Total/NA	Analysis	537 (modified)		1	420740	10/10/20 05:39	D1R	TAL SAC

Client Sample ID: DUP
Lab Sample ID: 480-176138-6
Date Collected: 10/06/20 11:15
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	553834	10/14/20 19:38	AMM	TAL BUF
Total/NA	Prep	3510C			553306	10/09/20 15:24	ATG	TAL BUF
Total/NA	Analysis	8270D		1	553672	10/13/20 22:46	JMM	TAL BUF
Total/NA	Prep	3535			420118	10/09/20 04:07	EG	TAL SAC
Total/NA	Analysis	537 (modified)		10	421022	10/12/20 15:56	K1S	TAL SAC

Client Sample ID: Trip Blank
Lab Sample ID: 480-176138-7
Date Collected: 10/06/20 00:00
Matrix: Water
Date Received: 10/08/20 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	553834	10/14/20 20:01	AMM	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	Total BTEX

Laboratory: Eurofins TestAmerica, Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11666	04-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	6:2 FTS
537 (modified)	3535	Water	8:2 FTS
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (FOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

Method Summary

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL SAC = Eurofins TestAmerica, Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: New York State D.E.C.
Job ID: 480-176138-1
Project/Site: SMP B - Cold Spring MGP

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-176138-1	GW-06	Water	10/06/20 09:25	10/08/20 08:00	
480-176138-2	GW-05	Water	10/06/20 10:40	10/08/20 08:00	
480-176138-3	GW-01	Water	10/06/20 12:20	10/08/20 08:00	
480-176138-4	GW-04	Water	10/06/20 13:25	10/08/20 08:00	
480-176138-5	GW-07	Water	10/06/20 14:45	10/08/20 08:00	
480-176138-6	DUP	Water	10/06/20 11:15	10/08/20 08:00	
480-176138-7	Trip Blank	Water	10/06/20 00:00	10/08/20 08:00	

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Albany #224

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: A. Fishman + L. Lill	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-151288-33469.1
Client Contact: Mr. Justin King	Phone: 518-641-8478	E-Mail: Judy.Stone@Eurofinset.com		Page: Page 1 of 1
Company: TRC Environmental Corporation				Job #:
Address: 10 Maxwell Drive Suite 200	Due Date Requested:			
City: Clifton Park	TAT Requested (days): Standard			
State, Zip: NY, 12065				
Phone:	PO #: CallOut SMP1215			
Email: jking@trccompanies.com	WO #: SMP1215			
Project Name: SMP B - Cold Spring MGP	Project #: 48022480			
Site: Cold Spring MGP	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	8260C - BTEX - 8260	8270D - PAH Semivolatiles	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	A	N		
GW-06	10/6/20	925	G	Water		X	X	X	X		
GW-05	10/6/20	1040	G	Water			X	X	X		
GW-01	10/6/20	1220	G	Water			X	X	X		
GW-04	10/6/20	1325	G	Water			X	X	X		
GW-07	10/6/20	1445	G	Water			X	X	X		
DUP	10/6/20	1115	G	Water			X	X	X		
TRIP BLANK				Water				X			
				Water							
				Water							

480-176138 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Lucia Lill	10/7/20 1440	TRC	Karl Zadra	10/7/20 1440	Eurofins
2	Karl Zadra	10/7/20 1700	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by: BLB	Date/Time: 10/8/20 0800	Company TA

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.6 #1

Ver: 01/16/2019

10/16/2020

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Albany #224

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: A. Fishman + L. Lill	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-151288-33469.1
Client Contact: Mr. Justin King	Phone: 518-641-8478	E-Mail: Judy.Stone@Eurofinset.com		Page: Page 1 of 1
Company: TRC Environmental Corporation		Analysis Requested		Job #:
Address: 10 Maxwell Drive Suite 200	Due Date Requested:			Preservation Codes:
City: Clifton Park	TAT Requested (days): Standard			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: NY, 12065				
Phone:	PO #: CallOut SMP1215			Other:
Email: jking@trccompanies.com	WO #: SMP1215			
Project Name: SMP B - Cold Spring MGP	Project #: 48022480			
Site: Cold Spring MGP	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA - PFAS, Standard List (21 Analytes)	8260C - BTEX - 8260	8270D - PAH Semivolatiles	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	A	N		
GW-06	10/6/20	925	G	Water		X	X	X	X		
GW-05	10/6/20	1040	G	Water			X	X	X		
GW-01	10/6/20	1220	G	Water			X	X	X		
GW-04	10/6/20	1325	G	Water			X	X	X		
GW-07	10/6/20	1445	G	Water			X	X	X		
DUP	10/6/20	1115	G	Water			X	X	X		
TRIP BLANK				Water				X			
				Water							
				Water							

480-176138 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Lill Lill	10/7/20 1440	TRC	Karl Zaehe	10/7/20 1440	Eurofins
Relinquished by: Karl Zaehe	Date/Time: 10/7/20 1700	Company	Received by:	Date/Time: 8 Oct 20 0945	Company ESAWNC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No	Custody Seal No.: 1248083	Cooler Temperature(s) °C and Other Remarks: 0.7°C

• time 920 on all containers so 10/8/20

Ver: 01/16/2019

10/16/2020

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Sacramento Sample Receiving Notes


480-176138 Field Sheet

Job: _____

Tracking #: 1891 4486 2867

SO / PO / FO / SAT / 2-Day / Ground / UPS / CDO / Courier

GSO / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Therm. ID: L-62 Corr. Factor: (+/-) N/A °C

Ice 0 Wet 4 Gel _____ Other _____

Cooler Custody Seal: 124 6083

Cooler ID: _____

Temp Observed: 0-7 °C Corrected: 0-7 °C

From: Temp Blank ☑ Sample ☐

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	☐	☑	☐
Cooler Temperature is acceptable?	☑	☐	☐

Initials: _____ Date: 8 Oct 20

Unpacking/Labeling The Samples	Yes	No	NA
CoC is complete w/o discrepancies?	☑	☐	☐
Samples compromised/tampered with?	☐	☑	☐
Sample containers have legible labels?	☑	☐	☐
Sample custody seal?	☐	☐	☑
Containers are not broken or leaking?	☑	☐	☐
Sample date/times are provided?	☑	☐	☐
Appropriate containers are used?	☑	☐	☐
Sample bottles are completely filled?	☑	☐	☐
Sample preservatives verified?	☐	☐	☑
Samples w/o discrepancies?	☐	☑	☐
Zero headspace?*	☐	☐	☑
Alkalinity has no headspace?	☐	☐	☑
Perchlorate has headspace? (Methods 314, 331, 6850)	☐	☐	☑
Multiphasic samples are not present?	☑	☐	☐

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials: SO Date: 10/8/20

Notes: Sample 1, 2, 4, 6

Trizma Lot #(s): _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	☑	☐	☐
Samples received within hold time?	☑	☐	☐
NCM Filed?	☑	☐	☐
Log Release checked in TALS?	☑	☐	☐

Initials: SO Date: 10/8/20

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-176138-1

Login Number: 176138

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	TRC
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-176138-1

Login Number: 176138
List Number: 2
Creator: Her, David A

List Source: Eurofins TestAmerica, Sacramento
List Creation: 10/08/20 07:25 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	1246083
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX E

DATA USABILITY SUMMARY REPORTS

GROUNDWATER, OCTOBER 2020

Data Usability Summary Report

Site: SMP B - Cold Spring MGP
Laboratory: Eurofins TestAmerica Buffalo – Amherst, NY
SDG No.: 480-176138-1
Parameters: Volatile Organic Compounds (VOCs): Benzene, Toluene, Ethylbenzene, and Xylenes (collectively, BTEX); Polycyclic Aromatic Hydrocarbons (PAHs)
Data Reviewer: Amy Bass/TRC
Peer Reviewer: Elizabeth Denly/TRC
Date: October 28, 2020

Samples Reviewed and Evaluation Summary

6 / Groundwater: GW-01, GW-04, GW-05, GW-06, GW-07, DUP[1]

[1] Field duplicate for GW-06

1 / Trip Blank Trip Blank

The above-listed samples were collected on October 6, 2020 and were analyzed for the following parameters:

- BTEX by SW-846 Method 8260C
- PAHs by SW-846 Method 8270D

The data validation was performed in accordance with *USEPA National Functional Guidelines for Organic Superfund Methods Data Review (EPA-540-R-017-002),* January 2017, modified for the SW-846 methodologies utilized.

The data were evaluated based on the following parameters:

	•	Overall Evaluation of Data and Potential Usability Issues
	•	Data Completeness
*	•	Holding Times and Sample Preservation
*	•	Initial and Continuing Calibrations
*	•	Blanks
*	•	Surrogate Recoveries
*	•	Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
*	•	Internal Standards
*	•	Laboratory Control Sample (LCS) Results
*	•	Field Duplicate Results
	•	Sample Results and Reported Quantitation Limits (QLs)
*	•	Target Compound Identification

* - All criteria were met.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for project objectives. Qualifications applied to the data as a result of sampling error were not required. Qualifications applied to the data as a result of analytical error are discussed below.

- Potential uncertainty exists for select BTEX and PAH results that were below the lowest calibration standard and QL. These results were qualified as estimated (J) in the associated samples. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

Data Completeness

The data package was a complete Level IV data deliverable package, with the exception that the laboratory did not report LCS and MS/MSD percent recoveries (%Rs), relative percent differences (RPDs), or laboratory acceptance criteria for total xylenes on the summary forms. The %Rs and RPDs were calculated during validation, and the laboratory acceptance limits were provided by the laboratory; no validation actions were taken on this basis.

Discrepancies noted in the laboratory report are discussed below.

- The laboratory Job Narrative noted that the sample collection time on container labels for GW-06 and the associated MS/MSD samples did not match the collection time recorded on the chain of custody (COC) form; collection times for these samples were entered based on the COC information. No validation action was required on this basis.

- The raw data reports for the PAH analyses state the calibration date as 09-Oct-2020; however, the associated calibration was performed on 29-Sep-2020, based on the initial calibration report provided in the laboratory report. The sample result recalculations were consistent with the 29-Sep-2020 calibration data; therefore, the calibration date stated on the raw data sheets appears to be an error. No validation action was required on this basis.

Holding Times and Sample Preservation

All holding time and sample preservation method criteria were met for the BTEX and PAH analyses.

Initial and Continuing Calibrations

All correlation coefficients, percent relative standard deviations, and relative response factors were within the method acceptance criteria in the initial calibrations associated with the BTEX and PAH analyses. The percent differences or percent drifts met the acceptance criteria in the associated continuing calibration standards for the BTEX and PAH analyses.

Blanks

Target analytes were not detected in the laboratory method blanks for the BTEX and PAH analyses. BTEX were not detected in the trip blank.

Surrogate Recoveries

The surrogate %Rs met the laboratory acceptance criteria in the BTEX and PAH analyses.

MS/MSD Results

MS/MSD analyses were performed on sample GW-06 for BTEX and PAHs. The MS/MSD %Rs and RPDs met the laboratory acceptance criteria.

Internal Standards

All internal standards met the method acceptance criteria in the BTEX and PAH analyses.

LCS Results

All criteria were met in the LCSs in the BTEX and PAH analyses.

Field Duplicate Results

The field duplicate pair GW-06 and DUP was submitted with this sample set. All BTEX parameters were nondetect in both samples; therefore, results were in acceptable agreement. Positive PAH results were <5× the QL; therefore, the RPD is not applicable, and the field duplicate precision evaluation was based on the absolute differences (AbsDs) between the results. In one case, one sample was nondetect (ND) and the other was a positive result; the AbsD is not calculable (NC) in this case, but criteria were met since the positive result was ≤2×QL. The following table summarizes the analytes that were detected in the field duplicate pair, the calculated AbsD values, and the resulting validation actions. Criteria were met for all detected analytes; therefore, no validation actions were required.

Analyte	QL (µg/L)	GW-06 (µg/L)	DUP (µg/L)	AbsD (µg/L)	Criteria	Validation Action
Acenaphthene	5.0	14	11	3	AbsD ≤ QL	–
Anthracene	5.0	1.1 J	0.96 J	0.14	AbsD ≤ QL	–
Fluoranthene	5.0	1.9 J	1.4 J	0.5	AbsD ≤ QL	–
Fluorene	5.0	0.85 J	0.92 J	0.07	AbsD ≤ QL	–
Phenanthrene	5.0	ND	0.50 J	NC	Detect ≤ 2×QL	–
Pyrene	5.0	2.6 J	1.8 J	0.8	AbsD ≤ QL	–
–: Criteria met; no validation action required						

Sample Results and Reported QLs

Select BTEX and PAH results were reported below the lowest calibration standard level and QL. These results were qualified as estimated (J) by the laboratory.

Sample calculations were spot-checked; there were no errors noted.

Dilutions (2-fold) were performed for the BTEX analyses of samples GW-05, GW-06, and DUP due to sample foaming in the initial sample analysis. The laboratory narrative also noted that these samples exhibited discoloration. No dilutions were performed in the remaining BTEX analyses or in the PAH analyses for this sample set.

Target Compound Identification

All criteria were met for the BTEX and PAH analyses.

QUALIFIED FORM 1s

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-06 Lab Sample ID: 480-176138-1

Matrix: Water Lab File ID: S2755.D

Analysis Method: 8260C Date Collected: 10/06/2020 09:25

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 17:44

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		2.0	0.82
108-88-3	Toluene	ND		2.0	1.0
100-41-4	Ethylbenzene	ND		2.0	1.5
179601-23-1	m-Xylene & p-Xylene	ND		4.0	1.3
95-47-6	o-Xylene	ND		2.0	1.5
1330-20-7	Xylenes, Total	ND		4.0	1.3
STL00431	Total BTEX	ND		4.0	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	102		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	99		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-05 Lab Sample ID: 480-176138-2

Matrix: Water Lab File ID: S2756.D

Analysis Method: 8260C Date Collected: 10/06/2020 10:40

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 18:07

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		2.0	0.82
108-88-3	Toluene	ND		2.0	1.0
100-41-4	Ethylbenzene	ND		2.0	1.5
179601-23-1	m-Xylene & p-Xylene	ND		4.0	1.3
95-47-6	o-Xylene	ND		2.0	1.5
1330-20-7	Xylenes, Total	ND		4.0	1.3
STL00431	Total BTEX	ND		4.0	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	101		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		77-120
460-00-4	4-Bromofluorobenzene (Surr)	102		73-120
1868-53-7	Dibromofluoromethane (Surr)	102		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-01 Lab Sample ID: 480-176138-3

Matrix: Water Lab File ID: S2757.D

Analysis Method: 8260C Date Collected: 10/06/2020 12:20

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 18:30

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	ND		1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	ND		1.0	0.76
1330-20-7	Xylenes, Total	ND		2.0	0.66
STL00431	Total BTEX	ND		2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	101		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	100		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-04 Lab Sample ID: 480-176138-4

Matrix: Water Lab File ID: S2758.D

Analysis Method: 8260C Date Collected: 10/06/2020 13:25

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 18:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	ND		1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	1.2		1.0	0.76
1330-20-7	Xylenes, Total	1.2	J	2.0	0.66
STL00431	Total BTEX	1.2	J	2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	101		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	113		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	100		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-07 Lab Sample ID: 480-176138-5

Matrix: Water Lab File ID: S2759.D

Analysis Method: 8260C Date Collected: 10/06/2020 14:45

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 19:16

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.94	J	1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	0.78	J	1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	ND		1.0	0.76
1330-20-7	Xylenes, Total	ND		2.0	0.66
STL00431	Total BTEX	1.7	J	2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	99		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	98		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: DUP Lab Sample ID: 480-176138-6

Matrix: Water Lab File ID: S2760.D

Analysis Method: 8260C Date Collected: 10/06/2020 11:15

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 19:38

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		2.0	0.82
108-88-3	Toluene	ND		2.0	1.0
100-41-4	Ethylbenzene	ND		2.0	1.5
179601-23-1	m-Xylene & p-Xylene	ND		4.0	1.3
95-47-6	o-Xylene	ND		2.0	1.5
1330-20-7	Xylenes, Total	ND		4.0	1.3
STL00431	Total BTEX	ND		4.0	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	103		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		77-120
460-00-4	4-Bromofluorobenzene (Surr)	104		73-120
1868-53-7	Dibromofluoromethane (Surr)	101		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: Trip Blank Lab Sample ID: 480-176138-7

Matrix: Water Lab File ID: S2761.D

Analysis Method: 8260C Date Collected: 10/06/2020 00:00

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 20:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	ND		1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	ND		1.0	0.76
1330-20-7	Xylenes, Total	ND		2.0	0.66
STL00431	Total BTEX	ND		2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	100		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	98		75-123

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-06 Lab Sample ID: 480-176138-1

Matrix: Water Lab File ID: Y02819105.D

Analysis Method: 8270D Date Collected: 10/06/2020 09:25

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 20:18

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	14		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	1.1	J	5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	1.9	J	5.0	0.40
86-73-7	Fluorene	0.85	J	5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	2.6	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	95		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	95		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	82		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-05 Lab Sample ID: 480-176138-2

Matrix: Water Lab File ID: Y02819106.D

Analysis Method: 8270D Date Collected: 10/06/2020 10:40

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 20:47

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	4.7	J	5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	ND		5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	ND		5.0	0.40
86-73-7	Fluorene	ND		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	ND		5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	95		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	94		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	75		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-01 Lab Sample ID: 480-176138-3

Matrix: Water Lab File ID: Y02819107.D

Analysis Method: 8270D Date Collected: 10/06/2020 12:20

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 21:17

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	ND		5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	ND		5.0	0.40
86-73-7	Fluorene	ND		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	ND		5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	96		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	94		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	97		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-04 Lab Sample ID: 480-176138-4

Matrix: Water Lab File ID: Y02819108.D

Analysis Method: 8270D Date Collected: 10/06/2020 13:25

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 21:47

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	33		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	1.8	J	5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	1.3	J	5.0	0.40
86-73-7	Fluorene	6.7		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	6.1		5.0	0.44
129-00-0	Pyrene	1.4	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	99		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	97		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	78		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-07 Lab Sample ID: 480-176138-5

Matrix: Water Lab File ID: Y02819109.D

Analysis Method: 8270D Date Collected: 10/06/2020 14:45

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 22:17

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	35		5.0	0.41
208-96-8	Acenaphthylene	3.8	J	5.0	0.38
120-12-7	Anthracene	0.97	J	5.0	0.28
56-55-3	Benzo[a]anthracene	0.48	J	5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	0.34	J	5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	0.33	J	5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	6.1		5.0	0.40
86-73-7	Fluorene	14		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	3.5	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	97		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	95		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	81		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: DUP Lab Sample ID: 480-176138-6

Matrix: Water Lab File ID: Y02819110.D

Analysis Method: 8270D Date Collected: 10/06/2020 11:15

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 22:46

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	11		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	0.96	J	5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	1.4	J	5.0	0.40
86-73-7	Fluorene	0.92	J	5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	0.50	J	5.0	0.44
129-00-0	Pyrene	1.8	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	98		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	98		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	79		60-148

QUALIFIED FORM 1s

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-06 Lab Sample ID: 480-176138-1

Matrix: Water Lab File ID: S2755.D

Analysis Method: 8260C Date Collected: 10/06/2020 09:25

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 17:44

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		2.0	0.82
108-88-3	Toluene	ND		2.0	1.0
100-41-4	Ethylbenzene	ND		2.0	1.5
179601-23-1	m-Xylene & p-Xylene	ND		4.0	1.3
95-47-6	o-Xylene	ND		2.0	1.5
1330-20-7	Xylenes, Total	ND		4.0	1.3
STL00431	Total BTEX	ND		4.0	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	102		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	99		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-05 Lab Sample ID: 480-176138-2

Matrix: Water Lab File ID: S2756.D

Analysis Method: 8260C Date Collected: 10/06/2020 10:40

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 18:07

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		2.0	0.82
108-88-3	Toluene	ND		2.0	1.0
100-41-4	Ethylbenzene	ND		2.0	1.5
179601-23-1	m-Xylene & p-Xylene	ND		4.0	1.3
95-47-6	o-Xylene	ND		2.0	1.5
1330-20-7	Xylenes, Total	ND		4.0	1.3
STL00431	Total BTEX	ND		4.0	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	101		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		77-120
460-00-4	4-Bromofluorobenzene (Surr)	102		73-120
1868-53-7	Dibromofluoromethane (Surr)	102		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-01 Lab Sample ID: 480-176138-3

Matrix: Water Lab File ID: S2757.D

Analysis Method: 8260C Date Collected: 10/06/2020 12:20

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 18:30

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	ND		1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	ND		1.0	0.76
1330-20-7	Xylenes, Total	ND		2.0	0.66
STL00431	Total BTEX	ND		2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	101		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	97		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	100		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-04 Lab Sample ID: 480-176138-4

Matrix: Water Lab File ID: S2758.D

Analysis Method: 8260C Date Collected: 10/06/2020 13:25

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 18:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	ND		1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	1.2		1.0	0.76
1330-20-7	Xylenes, Total	1.2	J	2.0	0.66
STL00431	Total BTEX	1.2	J	2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	101		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	113		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	100		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-07 Lab Sample ID: 480-176138-5

Matrix: Water Lab File ID: S2759.D

Analysis Method: 8260C Date Collected: 10/06/2020 14:45

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 19:16

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	0.94	J	1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	0.78	J	1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	ND		1.0	0.76
1330-20-7	Xylenes, Total	ND		2.0	0.66
STL00431	Total BTEX	1.7	J	2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	99		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	98		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: DUP Lab Sample ID: 480-176138-6

Matrix: Water Lab File ID: S2760.D

Analysis Method: 8260C Date Collected: 10/06/2020 11:15

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 19:38

Soil Aliquot Vol: Dilution Factor: 2

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		2.0	0.82
108-88-3	Toluene	ND		2.0	1.0
100-41-4	Ethylbenzene	ND		2.0	1.5
179601-23-1	m-Xylene & p-Xylene	ND		4.0	1.3
95-47-6	o-Xylene	ND		2.0	1.5
1330-20-7	Xylenes, Total	ND		4.0	1.3
STL00431	Total BTEX	ND		4.0	2.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	103		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		77-120
460-00-4	4-Bromofluorobenzene (Surr)	104		73-120
1868-53-7	Dibromofluoromethane (Surr)	101		75-123

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: Trip Blank Lab Sample ID: 480-176138-7

Matrix: Water Lab File ID: S2761.D

Analysis Method: 8260C Date Collected: 10/06/2020 00:00

Sample wt/vol: 5(mL) Date Analyzed: 10/14/2020 20:01

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: ZB-624 (20) ID: 0.18(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 553834 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
71-43-2	Benzene	ND		1.0	0.41
108-88-3	Toluene	ND		1.0	0.51
100-41-4	Ethylbenzene	ND		1.0	0.74
179601-23-1	m-Xylene & p-Xylene	ND		2.0	0.66
95-47-6	o-Xylene	ND		1.0	0.76
1330-20-7	Xylenes, Total	ND		2.0	0.66
STL00431	Total BTEX	ND		2.0	1.0

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	100		80-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		77-120
460-00-4	4-Bromofluorobenzene (Surr)	99		73-120
1868-53-7	Dibromofluoromethane (Surr)	98		75-123

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-06 Lab Sample ID: 480-176138-1

Matrix: Water Lab File ID: Y02819105.D

Analysis Method: 8270D Date Collected: 10/06/2020 09:25

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 20:18

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	14		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	1.1	J	5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	1.9	J	5.0	0.40
86-73-7	Fluorene	0.85	J	5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	2.6	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	95		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	95		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	82		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-05 Lab Sample ID: 480-176138-2

Matrix: Water Lab File ID: Y02819106.D

Analysis Method: 8270D Date Collected: 10/06/2020 10:40

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 20:47

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	4.7	J	5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	ND		5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	ND		5.0	0.40
86-73-7	Fluorene	ND		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	ND		5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	95		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	94		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	75		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-01 Lab Sample ID: 480-176138-3

Matrix: Water Lab File ID: Y02819107.D

Analysis Method: 8270D Date Collected: 10/06/2020 12:20

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 21:17

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	ND		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	ND		5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	ND		5.0	0.40
86-73-7	Fluorene	ND		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	ND		5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	96		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	94		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	97		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-04 Lab Sample ID: 480-176138-4

Matrix: Water Lab File ID: Y02819108.D

Analysis Method: 8270D Date Collected: 10/06/2020 13:25

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 21:47

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	33		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	1.8	J	5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	1.3	J	5.0	0.40
86-73-7	Fluorene	6.7		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	6.1		5.0	0.44
129-00-0	Pyrene	1.4	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	99		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	97		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	78		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-07 Lab Sample ID: 480-176138-5

Matrix: Water Lab File ID: Y02819109.D

Analysis Method: 8270D Date Collected: 10/06/2020 14:45

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 22:17

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	35		5.0	0.41
208-96-8	Acenaphthylene	3.8	J	5.0	0.38
120-12-7	Anthracene	0.97	J	5.0	0.28
56-55-3	Benzo[a]anthracene	0.48	J	5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	0.34	J	5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	0.33	J	5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	6.1		5.0	0.40
86-73-7	Fluorene	14		5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	ND		5.0	0.44
129-00-0	Pyrene	3.5	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	97		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	95		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	81		60-148

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Buffalo Job No.: 480-176138-1

SDG No.:

Client Sample ID: DUP Lab Sample ID: 480-176138-6

Matrix: Water Lab File ID: Y02819110.D

Analysis Method: 8270D Date Collected: 10/06/2020 11:15

Extract. Method: 3510C Date Extracted: 10/09/2020 15:24

Sample wt/vol: 250(mL) Date Analyzed: 10/13/2020 22:46

Con. Extract Vol.: 1(mL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 553672 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
83-32-9	Acenaphthene	11		5.0	0.41
208-96-8	Acenaphthylene	ND		5.0	0.38
120-12-7	Anthracene	0.96	J	5.0	0.28
56-55-3	Benzo[a]anthracene	ND		5.0	0.36
50-32-8	Benzo[a]pyrene	ND		5.0	0.47
205-99-2	Benzo[b]fluoranthene	ND		5.0	0.34
191-24-2	Benzo[g,h,i]perylene	ND		5.0	0.35
207-08-9	Benzo[k]fluoranthene	ND		5.0	0.73
218-01-9	Chrysene	ND		5.0	0.33
53-70-3	Dibenz(a,h)anthracene	ND		5.0	0.42
206-44-0	Fluoranthene	1.4	J	5.0	0.40
86-73-7	Fluorene	0.92	J	5.0	0.36
193-39-5	Indeno[1,2,3-cd]pyrene	ND		5.0	0.47
91-20-3	Naphthalene	ND		5.0	0.76
85-01-8	Phenanthrene	0.50	J	5.0	0.44
129-00-0	Pyrene	1.8	J	5.0	0.34

CAS NO.	SURROGATE	%REC	Q	LIMITS
321-60-8	2-Fluorobiphenyl	98		48-120
4165-60-0	Nitrobenzene-d5 (Surr)	98		46-120
1718-51-0	p-Terphenyl-d14 (Surr)	79		60-148

QC Nonconformances

-not applicable to this SDG

Data Usability Summary Report

Site: SMP B - Cold Spring MGP
Laboratory: Eurofins TestAmerica – Sacramento, CA
SDG No.: 480-176138-1
Parameters: Per- and Poly-fluoroalkyl Substances (PFAS)
Data Reviewer: Kristen Morin/TRC
Peer Reviewer: Elizabeth Denly/TRC
Date: November 4, 2020

Samples Reviewed and Evaluation Summary

6 Groundwater Samples: GW-01, GW-04, GW-05, GW-06, GW-07, DUP[1]

[1] Field duplicate for GW-06

The above-listed groundwater samples were collected on October 6, 2020 and were analyzed for PFAS (21 target analytes) based on EPA Method 537.1 (modified) using Eurofins TestAmerica – Sacramento, CA standard operating procedure (SOP) WS-LC-0025, revision 3.8, effective date 09/23/19.

The data validation was performed in accordance with the following guidance, modified for the methodology utilized:

- USEPA National Functional Guidelines for High Resolution Superfund Methods Data Review (EPA-542-B-16-001), April 2016
- USEPA Data Review and Validation Guidelines for Perfluoroalkyl Substances Analyzed Using EPA Method 537 (EPA 910-R-18-001), November 2018
- New York State Department of Environmental Conservation Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids, October 2020

The data were evaluated based on the following parameters:

- Overall Evaluation of Data and Potential Usability Issues
- Data Completeness
- * Holding Times and Sample Preservation
- * Initial and Continuing Calibrations
- * Blanks
- Isotopically Labeled Surrogate Results
- * Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- * Laboratory Control Sample (LCS) Results
- * Internal Standards
- Field Duplicate Results
- Sample Results and Reported Quantitation Limits (QLs)
- Target Compound Identification

* - All criteria were met.

Overall Evaluation of Data and Potential Usability Issues

All results are usable for project objectives. There were no qualifications applied to the data

because of sampling error. Qualifications applied to the data because of analytical error are discussed below.

- Potential uncertainty exists for select PFAS results that were below the lowest calibration standard and QL. These results were qualified as estimated (J) in the associated samples. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive results for 6:2 FTS were qualified as estimated (J) in samples GW-06 and DUP due to high isotopically labeled surrogate recoveries and field duplicate variability. These results can be used for project objectives as estimated values, which may have a minor impact on the data usability.

- The positive result for PFOS in sample GW-05 was qualified as estimated (J) due to the ratio between the two precursor/product ion transitions being outside the acceptance limits. This result can be used for project objectives as an estimated value, which may have a minor impact on the data usability.

Data Completeness

The data package was a complete Level IV data deliverable with the following exception. The sample receipt checklists were missing. The laboratory was contacted during validation and provided a revised report to correct this issue.

The laboratory was also contacted during validation to clarify why samples GW-06 and DUP were reported from diluted analyses in the original report. The revised Level IV data deliverable received on November 3, 2020 should be used for project objectives as results for GW-06 and DUP were reported from the undiluted analyses and qualified accordingly throughout this report.

In addition, the laboratory Job Narrative noted that the sample collection time on the container labels for sample GW-06 and the associated MS/MSD samples did not match the collection time recorded on the chain of custody (COC) form; collection times for these samples were entered based on the COC information. No validation action was required on this basis.

Holding Times and Sample Preservation

All holding time and sample preservation criteria were met.

Initial and Continuing Calibrations

The percent relative standard deviations were within the method acceptance criteria in the initial calibrations. The percent differences met the method acceptance criteria in the continuing calibration standards associated with the samples in this data set.

Blanks

PFAS compounds were not detected in the laboratory method blank.

Isotopically Labeled Surrogate Results

Eighteen isotopically labeled surrogates were spiked into the samples prior to extraction for

isotope dilution quantitation. The following table summarizes the isotopically labeled surrogate percent recoveries (%Rs) that did not meet the acceptance criteria and the resulting validation actions.

Sample ID	M2-6:2 FTS (%R)	M2-8:2 FTS (%R)	%R Limits	Validation Action
GW-05	265	239	25-150	Qualification was not required since 6:2 FTS and/or 8:2 FTS were not detected in the listed samples.
GW-04	165	-		
GW-07	161	-		
GW-06	208	186		The positive results for 6:2 FTS were qualified as estimated (J) in samples GW-06 and DUP.
DUP	223	191		Qualification was not required based on the high %Rs of M2-8:2 FTS since 8:2 FTS was not detected in samples GW-06 and DUP.
-: Met criteria				

MS/MSD Results

MS/MSD analyses were performed on sample GW-06. All %Rs and relative percent differences (RPDs) were within the laboratory acceptance criteria.

LCS Results

The LCS %Rs were within the laboratory acceptance criteria.

Internal Standards

One isotopically labeled internal standard, 13C2 PFOA, was added to each sample prior to injection to monitor for ion suppression/enhancement at the instrument level. The %Rs were within the laboratory acceptance limits of 50-150%.

Field Duplicate Results

Samples GW-06 and DUP were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected results and the validation actions.

Analyte	QL(s) (ng/L)	GW-06 (ng/L)	DUP (ng/L)	RPD (%)	Validation Action
PFBA	4.5/4.4	15	14	6.9	None
PFPeA	1.8	5.2	5.2	0	
PFHxA	1.8	3.6	3.6	0	
PFHpA	1.8	3.0	2.7	10.5	
PFOA	1.8	13	12	8.0	
PFNA	1.8	1.9	2.5	27.3	
PFBS	1.8	10	12	18.2	
PFHxS	1.8	3.5	3.4	2.9	
PFHpS	1.8	0.20 J	0.17 J	16.2	
PFOS	1.8	8.3	8.1	2.4	
6:2 FTS	4.5/4.4	12	20	50	The positive results for 6:2 FTS were qualified as estimated (J) in samples GW-06 and DUP.

Criteria:

- When both results are ≥ 2x the QL, RPDs must be ≤ 30%.
- When one or both results are < 2x the QL, absolute difference must be < the QL.

Sample Results and Reported Quantitation Limits

Sample calculations were spot-checked; there were no errors noted.

Select PFAS results were reported below the lowest calibration standard level and QL. These results were qualified as estimated (J) in the associated samples by the laboratory.

There were no dilutions performed on the samples in this data set.

The laboratory narrative also noted the following:

- Samples GW-04, GW-05, GW-06, and DUP exhibited a yellow color prior to extraction.
- Samples GW-04, GW-05, GW-07, and DUP contained a thin layer of sediment at the bottom of the bottle prior to extraction.
- Sample GW-06 contained floating particulates in the sample bottle prior to extraction.
- Samples GW-04, GW-05, GW-06, GW-07, and DUP exhibited a light yellow color after extraction and final volume.

Target Compound Identification

Extracted ion chromatograms were reviewed to verify the target compound identifications. The laboratory manually integrated several peaks to ensure the inclusion of linear and branched isomers for PFOA, PFOS, NEtFOSAA, NMeFOSAA, and/or PFHxS; and/or to ensure proper integration of all PFAS.

Two precursor/product ion transitions were used for identification for all compounds except for PFBA, PFPeA, PFOSA, NMeFOSAA, NEtFOSAA, 6:2 FTS, and 8:2 FTS which only used one precursor/product ion transition for identification.

The following table summarizes the ratio between the two precursor/product ion transitions for detected results that did not meet the laboratory acceptance criteria and the validation actions.

Sample ID	Compound	Ratio	Ratio QC Limits	Validation Actions
GW-05	PFOS	7.75	2.43-7.29	The positive result for PFOS in sample GW-05 was qualified as estimated (J).

QUALIFIED FORM 1s

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-06 Lab Sample ID: 480-176138-1

Matrix: Water Lab File ID: 2020.10.09_A18_PFC_B_037.d

Analysis Method: 537 (modified) Date Collected: 10/06/2020 09:25

Extraction Method: 3535 Date Extracted: 10/09/2020 04:07

Sample wt/vol: 280.8(mL) Date Analyzed: 10/10/2020 04:45

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420740 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	15		4.5	2.1
2706-90-3	Perfluoropentanoic acid (PFPeA)	5.2		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	3.6		1.8	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.0		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	13		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	1.9		1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65
375-73-5	Perfluorobutanesulfonic acid (PFBS)	10		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.5		1.8	0.51
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.20	J	1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.3		1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.87
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2
27619-97-2	6:2 FTS	12	J	4.5	2.2
39108-34-4	8:2 FTS	ND		1.8	0.41

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-05 Lab Sample ID: 480-176138-2

Matrix: Water Lab File ID: 2020.10.09_A18_PFC_B_040.d

Analysis Method: 537 (modified) Date Collected: 10/06/2020 10:40

Extraction Method: 3535 Date Extracted: 10/09/2020 04:07

Sample wt/vol: 280.2(mL) Date Analyzed: 10/10/2020 05:12

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420740 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	22		4.5	2.1
2706-90-3	Perfluoropentanoic acid (PFPeA)	6.2		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	5.7		1.8	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.8		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	7.4		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	0.86	J	1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	0.72	J	1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.3		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.2		1.8	0.51
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	5.5	~~I~~ J	1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.87
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2
27619-97-2	6:2 FTS	ND		4.5	2.2
39108-34-4	8:2 FTS	ND		1.8	0.41

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-01 Lab Sample ID: 480-176138-3

Matrix: Water Lab File ID: 2020.10.09_A18_PFC_B_041.d

Analysis Method: 537 (modified) Date Collected: 10/06/2020 12:20

Extraction Method: 3535 Date Extracted: 10/09/2020 04:07

Sample wt/vol: 285.8(mL) Date Analyzed: 10/10/2020 05:21

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420740 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	6.1		4.4	2.1
2706-90-3	Perfluoropentanoic acid (PFPeA)	8.1		1.7	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	7.7		1.7	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.2		1.7	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	13		1.7	0.74
375-95-1	Perfluorononanoic acid (PFNA)	0.58	J	1.7	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.64
375-73-5	Perfluorobutanesulfonic acid (PFBS)	6.4		1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.1		1.7	0.50
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.24	J	1.7	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.5		1.7	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.7	0.86
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.1
27619-97-2	6:2 FTS	ND		4.4	2.2
39108-34-4	8:2 FTS	ND		1.7	0.40

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-04 Lab Sample ID: 480-176138-4

Matrix: Water Lab File ID: 2020.10.09_A18_PFC_B_042.d

Analysis Method: 537 (modified) Date Collected: 10/06/2020 13:25

Extraction Method: 3535 Date Extracted: 10/09/2020 04:07

Sample wt/vol: 269.8(mL) Date Analyzed: 10/10/2020 05:30

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420740 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	8.7		4.6	2.2
2706-90-3	Perfluoropentanoic acid (PFPeA)	5.7		1.9	0.45
307-24-4	Perfluorohexanoic acid (PFHxA)	4.2		1.9	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.8		1.9	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	9.8		1.9	0.79
375-95-1	Perfluorononanoic acid (PFNA)	0.69	J	1.9	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.9	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.9	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.68
375-73-5	Perfluorobutanesulfonic acid (PFBS)	7.6		1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.6		1.9	0.53
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	6.9		1.9	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.91
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.6	1.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.6	1.2
27619-97-2	6:2 FTS	ND		4.6	2.3
39108-34-4	8:2 FTS	ND		1.9	0.43

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Client Sample ID: GW-07 Lab Sample ID: 480-176138-5

Matrix: Water Lab File ID: 2020.10.09_A18_PFC_B_043.d

Analysis Method: 537 (modified) Date Collected: 10/06/2020 14:45

Extraction Method: 3535 Date Extracted: 10/09/2020 04:07

Sample wt/vol: 276.1(mL) Date Analyzed: 10/10/2020 05:39

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420740 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	29		4.5	2.2
2706-90-3	Perfluoropentanoic acid (PFPeA)	3.0		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	1.9		1.8	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.1	J	1.8	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	2.2		1.8	0.77
375-95-1	Perfluorononanoic acid (PFNA)	0.28	J	1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.66
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.1		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.7	J	1.8	0.52
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.8	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.89
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.5	1.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.5	1.2
27619-97-2	6:2 FTS	ND		4.5	2.3
39108-34-4	8:2 FTS	ND		1.8	0.42

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Client Sample ID: DUP Lab Sample ID: 480-176138-6

Matrix: Water Lab File ID: 2020.10.09_A18_PFC_B_044.d

Analysis Method: 537 (modified) Date Collected: 10/06/2020 11:15

Extraction Method: 3535 Date Extracted: 10/09/2020 04:07

Sample wt/vol: 282.2(mL) Date Analyzed: 10/10/2020 05:48

Con. Extract Vol.: 10.0(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 420740 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	14		4.4	2.1
2706-90-3	Perfluoropentanoic acid (PFPeA)	5.2		1.8	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	3.6		1.8	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.7		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	12		1.8	0.75
375-95-1	Perfluorononanoic acid (PFNA)	2.5		1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.8	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.97
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.65
375-73-5	Perfluorobutanesulfonic acid (PFBS)	12		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.4		1.8	0.50
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.17	J	1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.1		1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.87
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		4.4	1.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		4.4	1.2
27619-97-2	6:2 FTS	20	J	4.4	2.2
39108-34-4	8:2 FTS	ND		1.8	0.41

QC NONCONFORMANCE DOCUMENTATION

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	C3PFBS #	PFHxA #	C4PFHA #	PFHxS #	M262FTS #	PFOA #
GW-06	480-176138-1	36	63	86	76	87	104	208 *5	93
GW-05	480-176138-2	43	62	92	75	93	110	265 *5	97
GW-01	480-176138-3	72	86	85	93	96	89	109	101
GW-04	480-176138-4	55	72	81	80	95	92	165 *5	90
GW-07	480-176138-5	68	79	79	83	91	88	161 *5	100
DUP	480-176138-6	35	64	89	77	98	109	223 *5	101
	MB 320-420118/1-A	85	88	85	89	88	91	104	104
	LCS 320-420118/2-A	84	90	86	87	91	87	100	94
GW-06 MS MS	480-176138-1 MS	34	60	82	74	88	95	190 *5	103
GW-06 MSD MSD	480-176138-1 MSD	37	64	86	77	94	100	200 *5	98

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
C3PFBS = 13C3 PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHxS = 18O2 PFHxS	25-150
C4PFHA = 13C4 PFHpA	25-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 480-176138-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	PFUnA #	d5NEFOS #
GW-06	480-176138-1	102	103	91	186 *5	91	102	114	112
GW-05	480-176138-2	110	93	82	239 *5	97	88	112	106
GW-01	480-176138-3	94	104	81	101	87	83	90	91
GW-04	480-176138-4	90	102	80	133	88	81	101	92
GW-07	480-176138-5	85	107	79	128	83	78	86	90
DUP	480-176138-6	111	99	97	191 *5	120	109	121	117
	MB 320-420118/1-A	91	99	77	103	84	88	99	96
	LCS 320-420118/2-A	88	85	81	97	79	95	82	95
GW-06 MS MS	480-176138-1 MS	98	96	89	163 *5	88	95	101	99
GW-06 MSD MSD	480-176138-1 MSD	104	100	90	166 *5	88	100	92	106

	QC LIMITS
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150
PFOSA = 13C8 FOSA	25-150
M282FTS = M2-8:2 FTS	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
d5NEFOS = d5-NEtFOSAA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 20 M2-6:2 FTS							GW-05			
429.00 > 81.00	3.880	3.887	-0.007	0.994	4835225	6.29		265	128	
21 6:2 FTS										
427.00 > 407.00	3.880	3.887	-0.007	1.000	126238	0.0276			93.9	
D 25 13C4 PFOA										
417.00 > 372.00	3.905	3.903	0.002	1.000	11182149	2.43		97.0	6648	
* 23 13C2 PFOA										
415.00 > 370.00	3.905	3.903	0.002		12206801	2.50			6818	
22 Perfluorooctanoic acid										M
413.00 > 369.00	3.905	3.903	0.002	1.000	1038452	0.2067	Target=2.95		11.9	M
413.00 > 169.00	3.905	3.903	0.002	1.000	386712		2.69(1.48-4.43)		121	M
D 27 13C4 PFOS										
503.00 > 80.00	4.270	4.276	-0.006	1.093	3809023	2.62		110	121	
29 Perfluorooctanesulfonic acid										RM
499.00 > 80.00	4.142	4.276	-0.134	0.970	272409	0.1543	Target=4.86		3.5	RM
499.00 > 99.00	4.270	4.276	-0.006	1.000	35159		7.75(2.43-7.29)		5.3	M
D 30 13C5 PFNA										
468.00 > 423.00	4.286	4.292	-0.006	1.098	9550967	2.32		92.8	5033	
31 Perfluorononanoic acid										M
463.00 > 419.00	4.286	4.292	-0.006	1.000	90439	0.0240	Target=8.38		2.3	M
463.00 > 169.00	4.286	4.292	-0.006	1.000	10878		8.31(4.19-12.57)		7.4	
D 33 13C8 FOSA										
506.00 > 78.00	4.617	4.615	0.002	1.182	5109919	2.05		81.9	8974	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.617	4.615	0.002	1.000	11884	0.006555			27.7	
D 39 13C2 PFDA										
515.00 > 470.00	4.643	4.641	0.002	1.189	10423558	2.43		97.3	9618	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.643	4.650	-0.007	1.189	5692892	5.73		239	273	
36 8:2 FTS										
527.00 > 507.00	4.643	4.650	-0.007	1.000	9015	0.002151			43.0	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.643	4.650	-0.007	1.000	81733	0.0202	Target=9.72		3.2	
513.00 > 169.00	4.652	4.650	0.002	1.002	7287		11.22(4.86-14.59)		7.9	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.805	4.811	-0.006	1.231	4570836	2.20		87.9	2791	
41 NMeFOSAA										
570.00 > 419.00	4.815	4.811	0.004	1.002	8200	0.005903			11.1	
D 43 13C2 PFUnA										
565.00 > 520.00	4.960	4.967	-0.007	1.270	11557899	2.80		112	13464	
45 Perfluoroundecanoic acid										
563.00 > 519.00	4.960	4.967	-0.007	1.000	28097	0.007750	Target=7.89		2.6	
563.00 > 169.00	4.970	4.967	0.003	1.002	4030		6.97(3.94-11.83)		4.7	
D 44 d5-NEtFOSAA										
589.00 > 419.00	4.970	4.977	-0.007	1.273	5639047	2.66		106	3034	
46 NEtFOSA										
584.00 > 419.00	4.980	4.977	0.003	1.002	10545	0.006524			28.6	